WONDERLAND

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GROUP OF BUTTE MINES,

*Including High Ore, Neversweat, Anaconda, Parrott, Colusa-Parrott, Blue Jay, Bellona, and Moon Light Mines.*

# WONDERLAND 1902

BY OLIN D. WHEELER

DESCRIPTIVE OF THAT
PART OF THE NORTHWEST
TRIBUTARY TO THE
## NORTHERN PACIFIC RAILWAY

OTHER CHAPTERS DESCRIBE
THE
NORTHERN CHEYENNE INDIANS.
YELLOWSTONE PARK,
THE PUGET SOUND COUNTRY, ETC

ILLUSTRATED

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CHAS. S. FEE,
GENERAL PASSENGER AND TICKET AGENT
NORTHERN PACIFIC RAILWAY,
ST. PAUL.

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# THE MORAINE OF THE GLACIER

"THIS is grand!—'tis solemn!—'tis an edieation of itself, to look upon! not a tree disturbed even by redskin hand, as I ean diseover, but everything left in the ordering of the Lord, to live and die aeeording to His own designs and laws!" Thus spake Fenimore Cooper's Deerslayer when first he looked upon the waters of Lake Otsego 150 years ago. Could Deerslayer stand to-day upon the shores of any one of a thousand Minnesota lakes, he could almost with truth and propriety repeat his statement. This, however, is but a half truth. As the region about Otsego in Deerslayer's time was debatable ground between the Delaware and the Mingo, so in later times the Minnesota lake region was eommon fighting ground between the Sioux and Ojibway. While all this is now ehanged, and in many plaees the white man and his eivilization have dispossessed the red man, in yet other plaees and on other lakes the solitude is still as unbroken as when the Ojibway and Dakotah—Sioux—hunted each other's scalps. In general, however, where once the Indian and his bireh bark eanoe skimmed the water, the white wings of fast scudding yaehts now gleam in the sunshine; where the bark tepee then stood, the eostly summer eottage now stands among the same old trees; where the Indian trails onee threaded the hill and forest, the white man's roads and railways now run. The old hunting grounds are transformed into farms; sheep and eattle replace the deer and elk.

One of the real beauties of this wonderful Lake Park region is the juxtaposition hinted at. A few rods, perhaps, from a lake gay with summer humanity, lies another as quiet, retired, and fragrant with

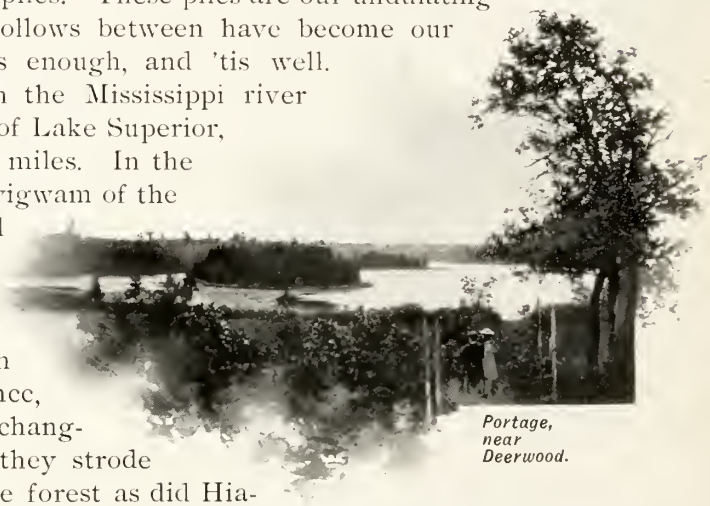
primeval conditions as it was a century ago. The mold of a century's leaves lies under foot, the reflections of a century sink deep within the waters, the solitudes of a century weigh heavily about the shores. Thus all sorts of humanity find here that which suits them best. The dreamer may dream himself away into the past, another may drink only of the present, forgetting entirely that there is any past.

*He bagged this near Deerwood.*

A rare old land is this Lake Park region, as it is called, with its limpid Otsegos, its cooling streams, its umbrageous woods, its beautiful rolling prairies — whence came its present form? of what fashion is its architecture?

Long before the Dakotah and Ojibway crossed their war-whoops the land was one of ice. From the far Northland, sweeping all before it, came the mighty, all embracing *glacier*.

How long it covered the land, we know not, as we count cycles, but when it gave up the ghost and retreated whence it came, it tumbled its tremendous load of debris pellmell, dumped it here, there, everywhere in irregular piles. These piles are our undulating hills and knolls; the hollows between have become our shimmering lakes. 'Tis enough, and 'tis well.



*Portage, near Deerwood.*

Between St. Paul on the Mississippi river and Duluth at the head of Lake Superior, is a trifle more than 150 miles. In the ancient days when the wigwam of the old Arrowmaker stood beside the falls of Minnehaha, it was a common thing for the Ojibway and the Dakotah to traverse this distance, when at peace, in interchanging visits. Sometimes they strode through the mazes of the forest as did Hiawatha, again they pushed their canoes up the streams that flowed into Gitche Gumee, portaged across the intervening divides and then drove the birch adown the swift current into the Father of Waters. Now, the business man of Duluth or the Twin Cities traverses this distance in less than five hours, on the limited trains of the Northern Pacific's "Duluth Short Line." In comparing the present with the past, we may well exclaim, "What hath God wrought!"

*One day's catch of black bass near Deerwood.*

A bird's-eye view of the Lake Park region shows that the Northern Pacific literally passes through the heart of this lake land. Its "Duluth Short Line" cuts across one part of it; its line to Brainerd, in conjunction with the Minnesota & International, penetrates the very wildest and most picturesque portion; the main line, through Staples,

Wadena, and Detroit, opens up still another section, while the line running westward from Ashland, Duluth, and the Superiors, through Deerwood and Aitkin, affords still another way of reaching the glorious hunting and fishing grounds of the region.

*Old block house, Fort Snelling. Erected 1820.*

If one were to undertake to point out the beauties of any considerable number of these lakes, varying as they do individually, it would require a volume. We, therefore, draw attention to a few of the more important.

And first a word about the great cities, the termini of this railway and the throbbing centers of action of the middle Northwest.

## ST. PAUL AND MINNEAPOLIS.

St. Paul, so named from a little log chapel erected on the bluffs near the river by the Catholics in the early days and called St. Paul's, is the capital of Minnesota and a great and growing city. Its spacious shaded avenues, asphalted streets, beautiful parks, costly bridges, fine buildings and residences of refined architecture, show the accompaniments of a large city. The site is one of unusual beauty upon both sides of the Mississippi river, here flowing between noble bluffs.

*Minnehaha Falls.*

A few miles up the river lies Minneapolis, St. Paul's companion city. What is said of the former may, in a general way, be said of the latter. And yet the cities are entirely different. Minneapolis lacks the St. Paul hills, has wider streets, large flouring mills that have made it noted the world over, and the fine water power of St. Anthony Falls, so named by Father Hennepin, the wandering Franciscan priest. Between the cities are the beautiful Minnehaha Falls, a most delightful spot and park, and Fort Snelling, one of the oldest and most picturesque military stations in the United States. Electric cars rapidly carry the tourist from the center of either city to these spots, or to Indian Mounds or Como Park in St. Paul, or to Lakes Harriet and Calhoun in Minneapolis.

*Old tower, Fort Snelling.*

## DULUTH AND SUPERIOR.

At the northern end of the "Duluth Short Line," on the shores of mighty Lake Superior, lie Duluth and the Superiors. Here again are growing cities touching elbows, yet very different. Duluth, named after an old and early explorer, picturesquely clings to the bluffs,

while Superior spreads abroad over the flat expanse that lies back of the several bays that run in from the lake. Ambition and metropolitanism are written over every feature of each city. The immense coal docks, elevators, flouring mills, and lake vessels at the wharves and docks, and in the offing, are all that are needed to emphasize almost any statement made by the enthusiastic Duluthian or Superiorite as to the future greatness of these Siamese-twin like cities.

*Central Park and heart of retail business section of St. Paul.*

Proctor Knott gave this head of the lakes region—and, indeed, Minnesota—a reputation and made it famous, by a certain humorous speech delivered in Congress long years ago when both Duluth and Superior were straggling villages. Now, the region reciprocates Knott's favor, by keeping his memory green through circulating his speech for the value afforded by its statements in a contrasting sense.

Duluth and Superior now have no need of Knott; without them Knott would be forgotten.

## WHITE BEAR AND BALD EAGLE LAKES.

Just eleven miles from the Union Station, St. Paul, lies the lake known among the Indians as the lake of the White Bear. It is St. Paul's summer resort, a beautiful sheet of water entirely free from rocks, shoals, or other obstructions, and furnishing an ideal yachting course. Its dimensions—four miles long by two miles wide, covering some 2,200 acres in extent—hardly convey an idea of its apparent size. Its shore line is very irregular, beautifully wooded and turfed, and with various summer resorts and club houses dotting it. Maniton Island is an aristocratic isle of royal cottages, curving drives, and old-time trees.

The White Bear Yacht Club has, within recent years, won fame for itself and White Bear lake. Herreshoff, the celebrated builder, sent one of his boats here, only to have it defeated by boats built at Minnetonka and White Bear.

With the first betokenings of summer—April 1st to May 1st—the hundreds of St. Paulites owning summer homes at White Bear lake,

*Gates Ajar, Como Park, St. Paul.*

hie themselves thither to remain until "school begins" in the fall. On holidays and warm Sundays St. Paul moves to White Bear and contiguous lakes. So heavy is this suburban traffic that a double track is necessary between St. Paul and the lake.

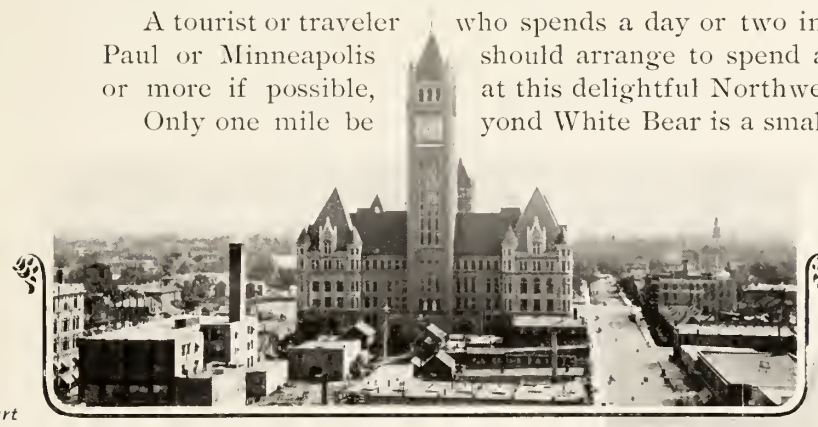
Hotels and boarding-houses are usually filled during the season. Bass, pickerel, pike, etc., are found in the lake, but boating is perhaps the chief attraction; large fleets of launches and row boats are kept for hire at reasonable rates.

The railway practically skirts the lake upon three sides. A branch line to Stillwater on the lower St. Croix river, leaving the western side of the lake at White Bear station, winds around the northern shore through Dellwood and Mahtomedi, two delightfully located lake resorts, thus bringing into communication with each other, and with the Twin Cities, the different parts of the lake.

On Sundays and holidays cyclists swarm over the cycle paths between St. Paul and the lake.

A tourist or traveler who spends a day or two in summer in St. Paul or Minneapolis should arrange to spend an hour or two, or more if possible, at this delightful Northwestern resort.

Only one mile beyond White Bear is a smaller, more quiet, attractive lake where, in the olden time, the bald eagle raised its young. Here another contingent of St. Paulites hurries at the first approach of summer. Here, too, are boating, fishing, and bathing to be found. Many who desire quiet and privacy have set up their summer household gods on the wave-rippled shores of Bald Eagle.



*Court House, Minneapolis.*

*In Loring Park, Minneapolis.*

THERE ARE OTHERS.

Twenty-five miles from St. Paul lies Forest lake, whose name reveals the character of its shores. Between Bald Eagle and Forest lakes are many small lakes, places where one may pitch a tent and rusticate, or stop at farmhouses and "be one of the family."

At Forest lake there are three hotels, as many lakes close at hand, and plenty of fish. We are now far enough away from the city so that

Copyright, 1901, by Crandall & Fletcher, Duluth, Minn.

*Duluth, Minn.*

the fishing grows better. The lake is four miles long and a mile wide, and good bass, pickerel, and pike fishing are found. Near by, in the streams tributary to the St. Croix river, there are trout, and in the season, good prairie chicken, partridge, and duck shooting may be enjoyed. At Forest lake one is fairly surrounded by lakes, so that if one tires of one of them, another can easily be found to relieve the monotony.

Forest lake is far enough away from St. Paul and Minneapolis so that those who prefer to get as far from the madding crowd and as close to country life as possible, and yet easily and quickly reach the city when occasion demands, can each and all be satisfied.

Like the wandering Jew we move on, and a farther ride of twenty-eight miles brings us to Rush City and lake. This country is being rapidly settled, large crops of hay and potatoes are raised, and the towns are growing into cities, as many hope.

Just west of Rush City lies Rush lake, four miles in length, two miles in width. This beautiful sheet of water has a shore line of forty miles and more, and is set in a region of unusual beauty. Two smaller lakes—Goose lake being the larger—near by form with Rush lake a trio of lakes hard to surpass for fishing and recreation. This region is largely unknown to the majority of anglers, and those who penetrate it are rewarded in a royal way.

At Rush City a branch line extends eastward, crossing the picturesque St. Croix river and continuing on to Grantsburg in Wisconsin.

*White Bear Yachting Association dock. A calm evening.*

Ten miles north from Rush City is Pine City. This means that here pine trees with their health-giving odors abound. The nearer we approach Lake Superior the more we penetrate a wide zone that seems to possess the qualities of a sanitarium. Although the lumbermen have created havoc in the apparently illimitable expanse of pine timber that once decked this region, there are still large areas of trees remaining.

Here, those whose lungs need the tonic properties found among pine forests, and those to whom hay fever is a hideous nightmare, may come, certain that Nature will afford relief and build them up. Here, too, they may find unbounded enjoyment and recreation among the many lakes and streams. Po-keg'-ama lake, Cross lake, Snake river, and Mission creek, are a few among many that minister to man's recreation and piscatorial tendencies. Bass, pike, and pickerel are found in the waters, and the wild fowl breed here during the season.

Northward in an air line the train flies, through Hinckley—the tragic scene of that terrible forest fire, and now spreading itself in new clothes and hiding the scars that that fiery baptism inflicted—on through other towns and a land where lakes lie scattered like drops of dew upon the grass—on, across and by the side of Kettle river, to where the road curves northeastward toward mighty Superior. Here, among others, are two large lakes, Sturgeon and Moose lakes, well stocked with the finny tribes and standing lures to the angler.

For the entire 150 miles of this line of railway, lakes are found in nearly every depression. They reach far back from the railway, those mentioned being but typical of thousands of others.

At Wyoming, twenty-nine miles from St. Paul, a branch line diverges, reaching the St. Croix river at Taylor's Falls. Midway between Wyoming and Taylor's Falls lies what, I believe, is conceded to be the gem system of lakes of this immediate region. There are five of them, a cluster of Nature's emeralds known collectively

*Yachting on White Bear lake.*

as the Chisago lakes, individually as Green, Big, Lindstrom, Chisago, and Sunrise lakes.

Nature has been lavish in her favoritism hereabouts. Standing upon some commanding point, one follows, with the eye, a bending shore line black green with the cool woodland whose roots drink the

*At Lindstrom, on Chisago lakes.*

refreshing waters that, like a silvery sheen, flash and play in the sunlight, receding and still receding into distance until hidden behind some other wooded crest. Deep bays indent the periphery of the lake, forming cool retreats where lovers delight to linger and pluck from the black ooze the water lilies that fleck the broad acres of the surface.

A field, a herd of cattle, a tapering spire, the flashing oars of a far-away boat, an humble farmhouse, a bit of railway track, an island, each and all throw variety into the scene and, in autumn, the play of color upon the slopes and hilltops intensifies one's longing that it might last forever, that life might be one long holiday.

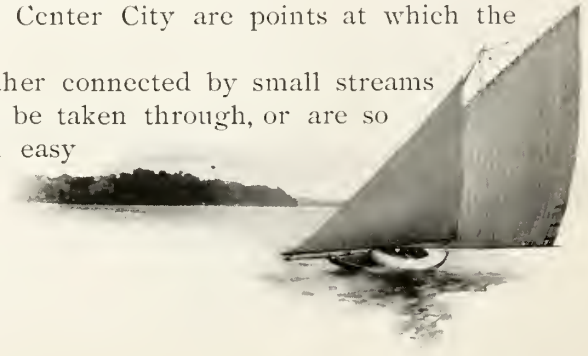
It is difficult to depict in cold type and descriptive phrase the innate charm of this series of lakes. There are some bits of landscape so winsome and soul-reaching, if I may thus use the expression, and yet, when analysis is attempted, so subtle and elusive, that one can not express wherein lies the charm that casts so deep a spell.

The wielder of the rod finds every opportunity for gratifying his passion on the Chisago lakes. If for any reason the finny tribes of one lake are in league against him, those of another will give him all the fighting he wishes. The water fowl, geese, mallards, teal, etc., hatch their young here, and the shot gun as well as the rod is a part of one's outfit.

Man has aided nature by constructing hotels at which the world-weary from the great cities may sojourn, and *rest*, REST, REST. Chisago City, Lindstrom, and Center City are points at which the tourist may stop.

*Black bass, Chisago lakes.*

Most of these lakes are either connected by small streams that a row boat or canoe can be taken through, or are so near together that short and easy



portages will enable one to transfer himself and belongings from one to another.

If one desires, the hotels can be forsaken for a time and camp life substituted. Camp life on Minnesota lakes, under Minnesota skies, is deserving of consideration.

DALLES OF THE ST. CROIX AND INTER-STATE PARK.

The terminus of the lateral road that leaves the "Duluth Short Line" at Wyoming is in the midst of a region very attractive to scientific men, because of its geologic interest. Taylor's Falls is equally interesting to the superficial observer who looks upon the striking rock figures simply as a matter of curiosity, and to the student who gazes upon them as a wonderful exhibition of Nature's methods of work and manufacture. To its natural and unadorned beauty another feature has been added. The States of Minnesota and Wisconsin, together, have taught a new lesson in parkitecture. With a broad-mindedness and liberality worthy of imitation they have set aside the land upon both sides of the St. Croix river—the boundary between the States—as an Inter-State Park. Within this area of about four hundred acres are the Dalles of the St. Croix and the richly carved and eroded bluffs bordering them. Under the direction of competent landscape architects such work as is necessary and advisable has been and is being done to make the park more attractive. Nature is not being outraged but assisted by man to improve, for man's own uses, what otherwise would remain more or less impossible of application to his highest use and enjoyment.

*The Sentinel of the Dalles. A wonderful profile.*

*Bird's-eye view of Dalles of St. Croix river.*

*A pothole in Inter-State Park.*

The St. Croix river is about 150 miles in length, of which 100 miles are above Taylor's Falls. For six miles above this point the river is a series of rapids. Le Sueur, the old explorer, who first mentioned the river by its present name in 1700, states that it was named after a Frenchman who lost his life at the mouth of it.

*Clarke lake. A gem in the Leech lake country.*

The river as it exists to-day is claimed by Warren Upham, the well-known geologist, to be a relic of the Glacial Period or Ice Age, and to be, say, 8,000 years old. Two causes have combined to produce the peculiar scenic effects at the Dalles. The first was a great outburst of lava; the second, the existence of an enormous glacier that covered the country. When the latter melted, a stream was born that forced its way across the lava ridge or dike, and for 8,000 years it has been slowly but remorselessly cutting its way downward and eating away the obstruction.

*Hauling logs in the Leech lake country.*

Much variety exists in the rock sculpture here, which is largely due to the character of the rock. The lava or trap, by which name it is commonly known, is very hard, and its cleavage planes are vertical. Ordinary weathering affects it but slightly, but the erosion and undermining by the river and the action of frost have largely produced the quaint effects.

Seen either from the bluffs or the river — for the latter at the Dalles is deep and the current scarcely noticeable, so that rowing and boating are perfectly safe — these cliffs are strikingly picturesque. If in the Eastern States, they would be visited by thousands yearly.

As usual the devil appears upon the scene, and the Devil's Chair is one of the most imposing columns of rock to be found. This column is, from some positions, very conspicuous and chair-like. Near it, higher up the bluff, is Pulpit Rock, serving somewhat to mitigate the evil atmosphere of the devil's presence. From Pulpit Rock, the angel Gabriel can, if he choose, thunder anathemas against the supposed occupant of the chair below him.

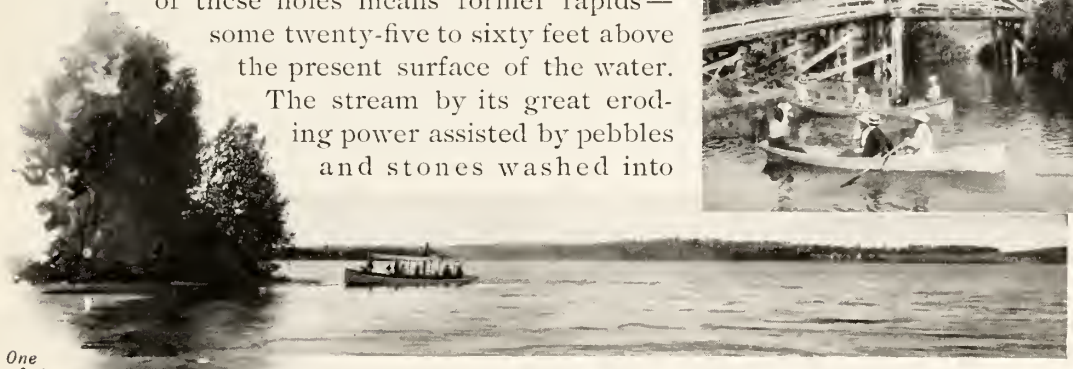
The Old Man or the Sentinel of the Dalles is a most remarkable profile — would be remarkable anywhere. It is said to be the most perfect rock face and bust known. It strongly resembles the profile of Washington, is stern

*Ojibwa Indians at Winnebigoshish lake.*

and dignified as was the Father of his Country. To see this striking figure the easiest and best way is to hire a row boat and drift slowly along the river at the base of the cliffs. The guide will row the boat into an eddy just below the point whereon the profile stands, where it may be seen in all its dignity and majesty.

There is another peculiarity of river action that interests not only the thoughtful observer, but at once attracts the most superficial. Scattered about over the more level spaces of the rocks are many holes, like cisterns. These range from one and one-half feet in diameter and six feet in depth, to ten feet in diameter and ninety feet or more deep, and twenty or even thirty feet in diameter and ten feet or more in depth. The presence of these holes means former rapids—some twenty-five to sixty feet above the present surface of the water. The stream by its great eroding power assisted by pebbles and stones washed into

*Near Detroit lake.*



*One of the Detroit lakes.*

what at first were small depressions, was able to excavate, slowly of course, these cisterns, or potholes, as they are known geologically. The force of the rapids, once these holes were started, kept the water, as it poured into them, whirling and boiling as in a maelstrom, and the stones, partaking of the circular motion, ground the sides and bottom larger and deeper as long as the power was applied. In many cases the small grinding stones and pebbles that were such important agencies in producing these potholes have been found in the potholes.

Substantial stairways and walks afford means of easily and safely moving about among the rocks.

The hotels are so satisfactory, the atmosphere so soft and balmy, the region a pine-timbered, healthful one, that with good fishing round about, and easy access to the cities, it may well be singled out by the summer boarder and tourist of moderate means as a desirable place for a vacation sojourn.

One of the sights of the season is log driving. Twice or more each week a dam, twelve miles up the river, is opened, and water sufficient to raise the depth of the river three feet is released, the logs are then loosed, and away they go in mad rush over the six miles

of rapids, through the Dalles, and down the river to Lake St. Croix. At night, as one stands on the iron bridge at the head of the Dalles, the river will be filled with rushing, bumping, thumping, diving, rearing, rolling, tumbling, crashing logs; in the morning not a log can be seen save those hung high and dry on the rocks and bars, while the erstwhile torrential river rolls by as calmly and currentless as a slack water creek. Sometimes log jams occur. Then a scene of fascinating confusion ensues. If the jam be of large dimensions, the Dalles will be an immovable mass of logs piled solid, with ends projecting, like an abattis, in all directions. For half a mile and more they will be wedged in to the number, sometimes, of 60,000,000, and excursion trains then carry hundreds of passengers to Taylor's Falls to see them.

Many lakes are found in the country round about Taylor's Falls where the bass, pike, etc., fishing is good, and wall-eyed and sand pike are caught in the St. Croix itself. Balsam lake, in Wisconsin, is one of the best.

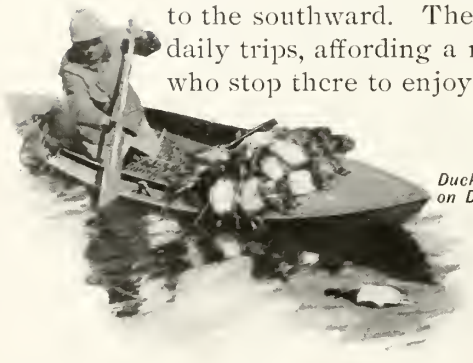
North of Brainerd lies the Leech lake country, but recently opened to the world by railways, and beyond that is the Rainy lake region. This section is virgin ground for the tourist and fisherman. Besides Leech lake there are Woman, Cass, Bemidji, and a thousand other lakes full of beauty and of fish. The Leech Lake Indian Reservation is in this region, and Hiawatha, Minnehaha, Nokomis, and the rest may be seen in real life everywhere.

In this section, too, are the headwaters of the Mississippi river, still as wild and untutored as when Nicollet and Schoolcraft camped upon them.

East of Brainerd the Deerwood lakes afford quiet, rustic enjoyment at small expense. They are but a few hours' ride from Duluth and Superior.

West of Little Falls and Staples, and starting from Wadena, a branch line extends southwestwardly to Breckenridge and Fergus Falls, passing Clitheral and Battle lakes in the heart of a beautiful country of rolling prairie, and one simply filled with lakes.

On the main line, Perham and Detroit are unusually good outing and fishing spots, with Frazee and Lake Park following closely after. At Detroit a chain of lakes, much varied in character, stretches down to the southward. These are navigated by a little steamer that makes daily trips, affording a rather unique as well as pleasing trip for those who stop there to enjoy it.



*Duck shooting on Detroit lakes.*

MONTANA is known as "The Treasure State," and its motto is "*Oro Y Plata*"—Gold and Silver. How appropriately this name and motto fit the region it will be the purpose of this paper to show, the discussion being restricted to gold, silver, and copper.

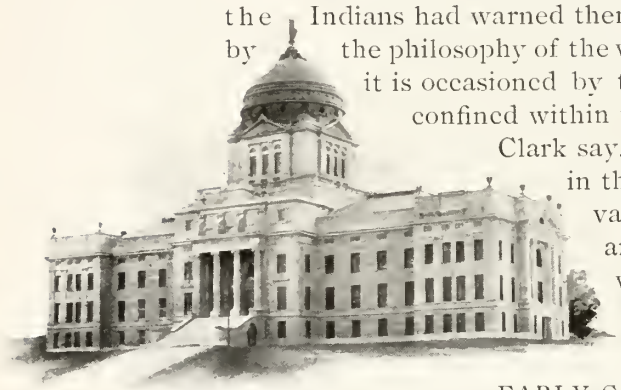
Joaquin Miller, in his "History of Montana" (1894), quotes Livy and Pliny to show that the word Montana is an ancient Latin word, it being used by them in this precise form. Mr. W. E. Sanders, a former Librarian of the Historical Society of Montana, in an interesting discussion of the word, based upon Miller's assertion (Brower's "The Missouri River," Appendix, pp. 178, 179; "Wonderland '97," pp. 14, 15), insists that the word is really of Spanish origin, but derived undoubtedly from the Latin word *mons*, mountain.

In either case it means the same, and the translation, the mountainous region or the Country of the Mountains, finds an answering aboriginal echo in To-ya-be-Shock-up, an Indian word of the same meaning.

Montana has an area of more than 146,000 square miles. The western part of the State, somewhat less than one-half of it, is mountainous, the main Rocky Mountain chain traversing the State in many detached but parallel ranges, from northwest to southeast, and forming the conspicuous feature of the State's topography.

The first recorded suggestion that these mountains might contain

mineral wealth, appears to have been made by Lewis and Clark, in 1805.* When they arrived at the Great Falls of the Missouri they heard strange, loud, and frequent explosions in the mountains, of which the Indians had warned them. "The solution of the mystery given by the philosophy of the watermen [with Lewis and Clark] is, that it is occasioned by the bursting of the rich mines of silver confined within the bosom of the mountains," Lewis and Clark say. These explosions have also been heard in the Black Hills and in other countries, and various explanations given for them. At any rate the silver was and is there, whether it was ever so full of its own importance that it could not contain itself or not.



*Montana State Capitol.*

## EARLY GOLD DISCOVERIES.

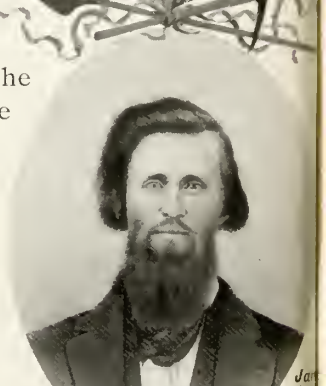
All reliable accounts seem to agree that Hon. Granville Stuart's chronicle regarding the first well authenticated discovery of gold or "color" is the correct one.

This discovery, which had little or no practical result at the time, was made in 1852 by a French, Red River half-breed, named François Finlay, commonly known as "Benetsee," on a creek originally known as Benetsee's creek, but later and now called Gold creek.

This creek flows into the Hell Gate river, between Garrison and Missoula, on the Northern Pacific, and when the railway was completed the junction of the eastern and western divisions was made at this very point, and the last spike—an iron, not a gold one—was driven in September, 1883, thirty-one years after Benetsee had found the first gold in the region. It is said to be a fact that S. M. Caldwell also discovered gold in 1852 on Mill creek, in the Bitter-root valley.

Gra
Stu

In 1858 the two Stuarts, Granville and James—the former still alive and full of years, and one whom the Montanese delight to honor—with others, set up their *lares* and *penates* on Benetsee creek and endeavored to woo Fortuna, but with little success. Leaving the locality for a time, but meeting with no better luck, the Stuarts returned to Gold creek in the fall of 1860, where the town of American Fork was established at the point where the Northern Pacific now crosses the creek. They then prospected up the creek and its tributary gulches.



Jam
Stu

* I have since found that Jonathan Carver, in recounting his travels through this country in 1766-1768, states as follows: "Probably in future ages they [meaning the Shining or Rocky mountains] may be found to contain more riches in their bowels, than those of Indostan or Malabar, or than are produced on the Golden Coast of Guinea; nor will I except even the Peruvian mountains."

*Pioneer, Mont.*
*First gold found near here in 1852.*

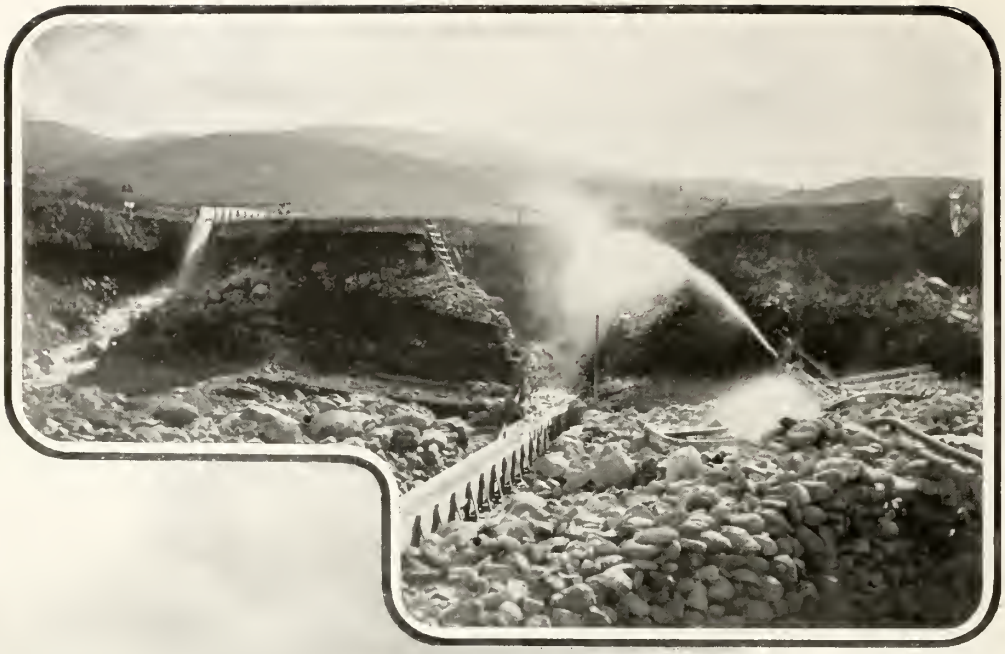
*Near Pioneer.*
*Showing bowlders thrown into piles by the old placer miners.*

Here they remained until sensational placer discoveries elsewhere caused a stampede, and practically depopulated American Fork. Their success here was not phenomenal, a fair daily wage being scarcely made by hard labor. In subsequent years, however, the hillsides whereon the Stuarts pastured their horses, and the higher banks of the creek were found to be very rich, millions of dollars in dust and nuggets being taken out there, and in 1866 the town of Pioneer was started on Pioneer creek, a branch of Gold creek.

The Stuarts and their associates are given the credit of being the pioneers in precious metal mining in Montana, and they set the first sluices used in the territory. Although born in Virginia, the Stuart brothers came to Montana from California, where they had engaged in mining, and James Stuart was one of the most undaunted and remarkable men that ever lived on the frontier.

While these pioneers were laboriously pegging, or rather sluicing away on Gold and Pioneer creeks, other events of great importance were occurring among the Montana hills.

The discovery of gold in California by Marshall in 1848, started a



*Hydraulic mining, in 1901, at Pioneer, Mont.*

*Riffle blocks, placed on bottoms of sluices to catch the gold in placer mining. In the distance can be seen the effects of hydraulic mining.*

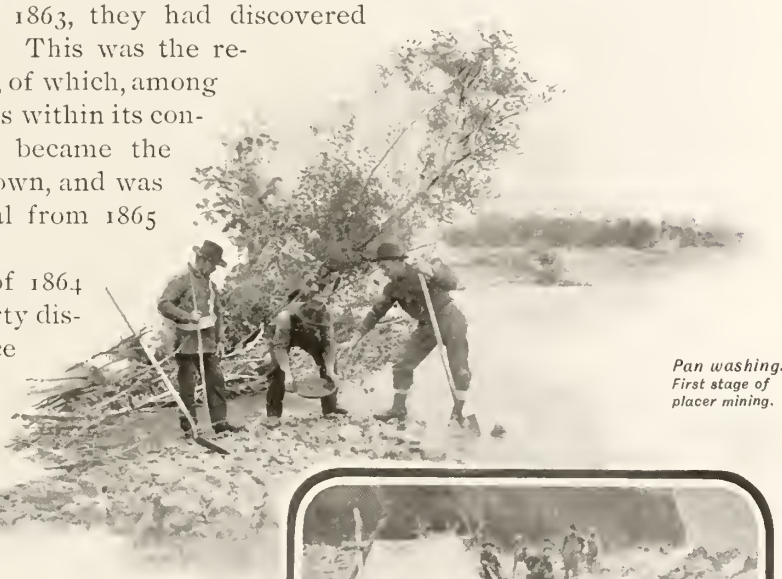
tidal wave of gold hunting that, apparently, and even until now, has grown larger as it has rolled on. The Stuarts and their companions were a little in advance of this wave in '58, but early in the 60's it began to roll up against the Rockies in Montana, and in 1862 it struck in full force.

In that year gold was discovered at several points, but notably on Willard's creek—Lewis and Clark's name—since known as Grasshopper creek. Two men, Jno. White and Wm. Eads, the latter said to be a son of Capt. James Eads, the celebrated engineer of St. Louis, were the discoverers, and to the town was given the name Bannack, after the Indian tribe of that name. The "diggings" at Bannack were marvelously rich and a stampede to them ensued, not only from other parts of Montana, but from Colorado and the west in general. In 1864, when the territory of Montana was created, Bannack became the first capital.

Scarcely had the excitement and surprise occasioned by the finding

of the rich placers at Bannack (I use the old spelling of the word; the second A is now usually changed to o) subsided somewhat before "Bill" Fairweather, Henry Edgar, and their associates rode into Bannack and announced—although they had agreed to maintain secrecy—that on May 26, 1863, they had discovered another rich gulch. This was the renowned Alder gulch, of which, among several mining towns within its confines, Virginia City became the chief and widest known, and was the territorial capital from 1865 to 1875.

In the summer of 1864 John Cowan and party discovered Last Chance gulch, where Helena now stands, and at this time the first placer discoveries near Butte were made.



*Pan washing. First stage of placer mining.*

In 1865 Confederate gulch, east of Helena and across the Missouri river, and Ophir gulch, west of Helena and beyond the mountains, were the more important of many found.

The ores of Montana are principally of gold, silver, and copper, lead being an unimportant feature of many of them. Of late years the purely silver-lead ores have been of little value commercially,

*A gold rocker. Second stage of placer mining.*

*Hydraulic mining. Third stage of placer mining.*

*Bannack, Mont., In the 60's.*

*First legislative hall, State of Montana, Bannack, 1863.*

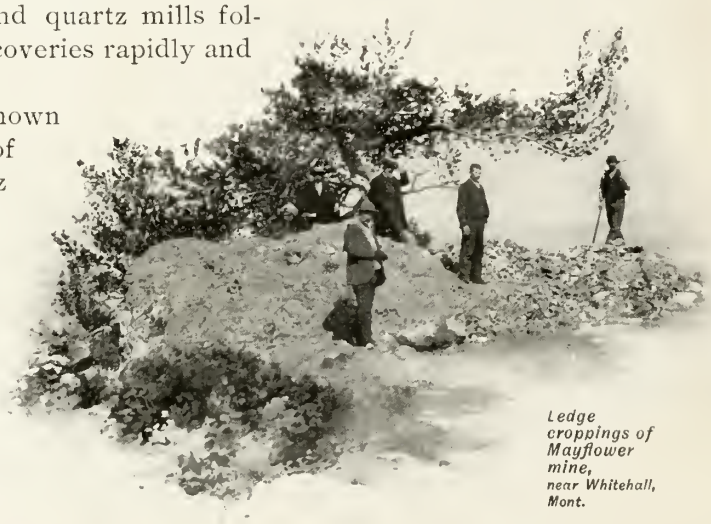
while the copper ores have been very valuable and the output of copper has been enormous.

In early days gold was the metal sought for, silver being a secondary consideration, and no thought was given to copper.

Since the placer days of '49 great advances in mining had been made, and ledge or quartz mining had now assumed an important position. It thus resulted that quartz mining was almost coincident with placer mining in Montana, the Dakotah lode at Bannack being discovered and opened late in 1862. The Dakotah quartz was gold quartz, and a small mill to work it was erected and in operation in the spring of 1863, its projectors being Wm. Arnold and J. F. Allen. The stamps of this mill were of wood and the shoes and dies were made from old wagon tires.

As fast as the placer mines were discovered, prospecting was begun for the quartz leads from which the placers were supposed to come, and mining shafts and quartz mills followed the placer discoveries rapidly and not always profitably.

One of the best known and most valuable of these early gold quartz claims was the Whitlatch - Union lode, near Helena, from which gold to the amount of millions of dollars was taken.



*Ledge croppings of Mayflower mine, near Whitehall, Mont.*

Silver first attracted attention in 1864, when argentiferous galena was found on Rattlesnake creek, not far from Bannack, at a point called Argenta.

The first silver quartz mill was built at Phillipsburg in 1866 or 1867, and the first successful silver smelter at Argenta in 1867.

Copper was first found in 1864 near Butte, but it was some years before its real value as a mineral asset to Montana was appreciated

*First bank in Virginia City, Mont. Still used as such.*

*Virginia City, Mont., in the 60's.*

or much interest taken in it. For a long time it was supposed that the valuable copper deposits were confined to the neighborhood of Butte, but it has been gradually ascertained that they probably constitute an important part of the entire metal-bearing zone of Montana.

From and after the year 1865, new discoveries were constantly made, followed by the usual stampedes; stamp mills, smelters, flumes, water ditches, etc., were rapidly built as the exigencies of the calling required; towns multiplied on the hillsides and population poured in from all directions.

In 1876 Hon. W. A. Clark, now U. S. Senator from Montana, delivered an address at the Centennial Exposition, which is published in

*Old Whitlatch-Union gold mill, near Helena, in the 60's*

Vol. II issued by the Historieal Society of Montana. He stated that at that time there were about 500 gold-bearing gulches in Montana, varying from one-half a mile to twenty miles in length, the gold running from 600 to 990 thousandths fine.

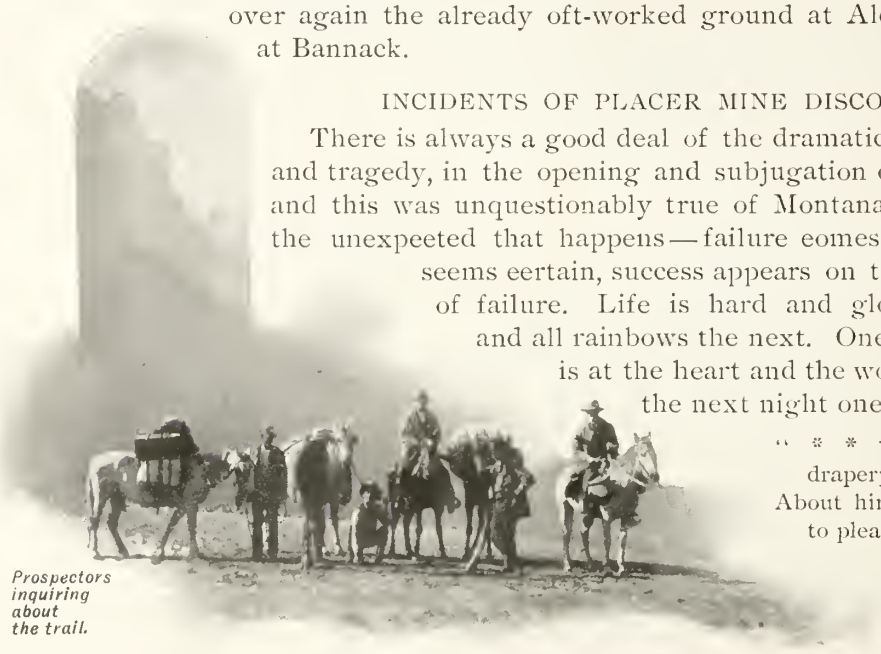
The "strenuous life" of a gulch lasts but a few years. The guleh is, or was in the old days, worked out rapidly, the expense of living and eost of labor and materials being so great that this was necessary, even with a very rich pay streak, to render the work profitable. This is all changed now, and the railways have been the chief faetors in the ehange.

Many of the old and noted gulches are being worked to-day. In 1901 the writer saw placer and hydraulie mining going on in Emigrant, Confederate, and Pioneer gulehes, and dredges were working over again the already oft-worked ground at Alder guleh and at Bannack.

## INCIDENTS OF PLACER MINE DISCOVERY.

There is always a good deal of the dramatic, both eomedy and tragedy, in the opening and subjugation of a new land, and this was unquestionably true of Montana. It is often the unexpeeted that happens—failure eomes when sueeess seems eertain, success appears on the very verge of failure. Life is hard and gloomy one day and all rainbows the next. One night despair is at the heart and the wolf at the door, the next night one

" * * * * Wraps the drapery of his couch
About him and lies down to pleasant dreams."



*Prospectors inquiring about the trail.*

There was much of luck, accident, sentiment, etc.—commonplace enough, some of it—in the finding, naming, and development of mining camps and towns.

Alder gulch is reputed to be the richest gulch ever known. Its discovery, while of course it would have been made sooner or later in any event, was entirely accidental.

On February 4, 1863, a company of eight men left Bannack on a prospecting tour. They were to meet a larger party led by James Stuart, at the mouth of Beaverhead river, near where Twin Bridges and Sheridan on the Northern Pacific now stand. Missing them, they followed on, endeavoring to overtake them, were captured by Indians, released, and in making their way back to Bannack camped one noon on a small creek. The men, except Fairweather and Edgar, largely from habit probably, went out to prospect a little, the two latter

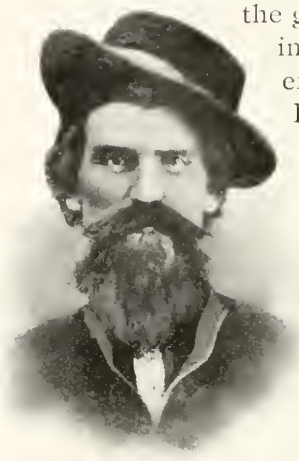
*4th of July, Nevada (Alder gulch), Mont., 1865.*

remaining to watch camp and the horses. Fairweather noticing a piece of "rim rock," Edgar and he took a shovel, pick, and pan, went to the ledge, and Fairweather dug up a pan full of dirt and Edgar washed it. After washing, there was gold in the pan worth $2.40, and while Edgar was panning, Fairweather had found a nugget worth exactly the same amount.

The finding of this $4.80 was the discovery of Alder gulch, as the other men found nothing, and before they had returned to camp Edgar and Fairweather had panned out $12.30 in gold. Edgar named the gulch from the alder bushes growing on its banks, and the district was named after Fairweather, who, years afterward, dying from dissipation, was buried near the site of his discovery.

In connection with the placer workings in the Gold creek region in the later 60's, when the scene shifted from American Fork and the

mouth of Gold creek, to a point some five miles above on a tributary gulch which became known as Pioneer gulch, the Northern Pacific happens to be indirectly related as follows:



"Bill" Fairweather, discoverer of Alder gulch.

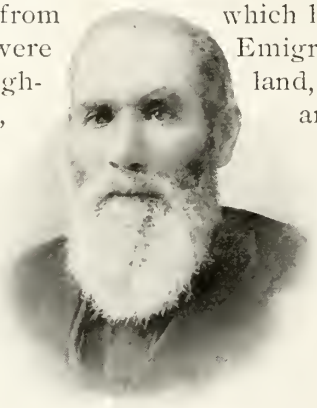
One of the most indefatigable of Governor Stevens' assistants on the government survey for the Northern Pacific Railway route in the late 50's was Lieut. John Mullan. Mullan thoroughly explored all the country around and west of Helena and Butte, and discovered the advantages of the pass across the Rockies, to which his name was given and which the railway engineers finally adopted. After the upper Gold creek placers had been worked for some time, Mullan visited them, and upon learning that no name had been given to the gulch and town, suggested the name "Pioneer," which was at once adopted.

In the early summer of 1864 "Uncle" John Cowan, at the head of a band of prospectors, found "pay dirt" in the valley north of Helena, but the party were not quite satisfied with the prospect and went on their weary way. Finding nothing they returned to give the gulch another trial, speaking of it as being their *last chance* for finding anything after a hard, fruitless, summer's work. This time they went farther up, well into the gulch, and, in the very heart of what now constitutes Helena, sank two holes to bedrock, found gold in abundance, named the gulch Last Chance, and settled down and went to work.

The usual stampede took place, a city grew up which, in 1875, was made the territorial capital, and the huge piles of rocks, and little old log cabins sandwiched in among modern city buildings, to-day attest what was once done here, and is even now being done, for the placers are still being worked in a modest way.

Helena was named in the fall of 1864, after a town in Scott County, Minnesota, John Somerville, a former resident of the latter place, insisting that the name of his old home town should become that of the new one. As adopted the name was Hel-e'-na, not Hel'-e-na as it is now pronounced.

There were a large number of gulches in Montana that in their day were well known, and from which large amounts of gold were taken. Such were Emigrant, Ophir, Bear, New York, German, Cave, Highland, Oro Fino, Silver Bow, Deadwood, McClellan, and Dry gulches, and Carpenter, Montana, and other bars, and there were many more. During the active working of these placers towns sprang up like mushrooms, and when the yield of gold began to diminish they as quickly died and were deserted.



Henry Edgar, discoverer of Alder gulch.

*A Miner's cabin.*

*View of placer rock dumps in Last Chance gulch in 1901, with residence part of Helena and Mt. Helena in background.*

*Helena, Mont., May, 1860.*

*Main street, Helena, 1901.*
*Occupies bed of Last Chance gulch.*

*Vauter street, Helena, in early days, showing Catholic hospital.*

One of the most conspicuous and important of these was the well-known Confederate gulch. This gulch is said to have been discovered by Confederate soldiers of Price's army who, in 1861, after the battles of Lexington, Pea Ridge, etc., in Missouri, made their way to Montana via the Missouri river and Fort Benton. On their way to Last Chance gulch they found "colors" near the mouth of a gulch which came down from the Belt mountains. Following up the gulch they found the pay dirt growing richer, and there they established themselves naming the gulch Confederate, and within a short time Diamond City, the town of the gulch, was the center of a population of 5,000 souls.

THE Northern Pacific Railroad from the head of Lake Superior will run through Wisconsin, Minnesota, and the Territories of Montana, Idaho, and Washington, to the head of navagation on the Columbia. The The first 25 miles from the Western terminus is either under contract, or will be so, shortly.

*From an old "Montana Post."*

If Alder gulch stands as the richest known gulch in the world, Confederate was in many respects the most phenomenal, and was, as well, one of the greatest. The ground was so rich that as high as $180 in gold was taken from one pan of dirt, and from a plat of ground four feet by ten feet, between drift timbers, $1,100 worth of gold was extracted in twenty-four hours. At the junction of Montana gulch—a side gulch—with Confederate, the ground was very rich, the output at that point being estimated at $2,000,000.

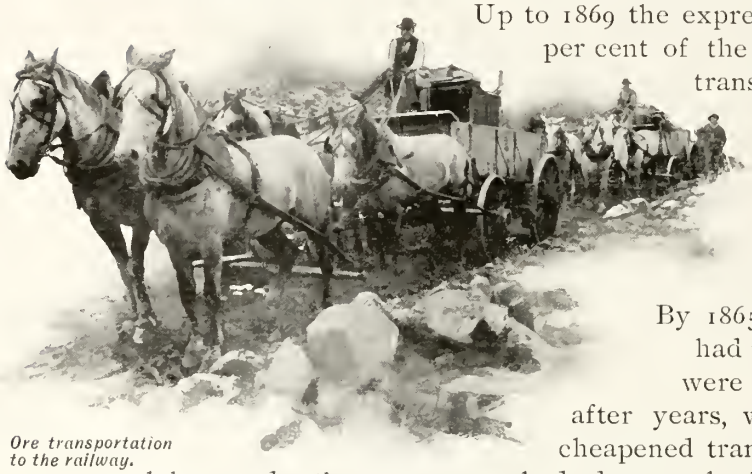
Montana bar, which lies some distance up the gulch and at considerable of an elevation above it, was found in the latter part of 1865 to be marvelously rich. There were about two acres in reality, that were here sluiced over, but the place is spoken of as "the richest acre of gold-bearing ground ever discovered in the world." I quote Mr. A. M. Williams of the *Republican*, Livingston, Mont., who has made a special study of these old gulches: "The flumes on this bar, on cleaning up, were found to be burdened with gold by the hundred weight, and the enormous yield of $180 to the pan in Confederate and Montana gulches was forgotten in astonishment and a wild delirium of joy at the wonderful yield of over a thousand dollars to the pan of gravel taken from the bed rock of Montana bar." From this bar seven pans-full of clean gold were taken out at one "clean up," that weighed 700 pounds and was worth $114,800. A million and a half dollars in gold was hauled by wagon from Diamond City to Fort Benton at one time for shipment to the East.

## PLACER MINE PRODUCTION.

It would be not only interesting but valuable as well, could an accurate statement be made of the gold turned into the channels of art and eommerce from the old placer mines. In the very nature of

*Views of*
*Diamond City and*
*Confederate gulch in the 60's.*

the case this is impossible. Statistics were not kept in those days, and the state of society was such — as will appear later — and transportation methods so uncertain, expensive and crude, that a great deal of secrecy was observed as to output, and large quantities of gold dust and nuggets — the forms in which the gold was taken from the placers — escaped from the region without much being known about it.



*Ore transportation to the railway.*

Up to 1869 the express companies charged 5 per cent of the value of the gold for transportation, which led to undervaluation. Much of it was shipped by freight, and large amounts were carried away on the persons of individuals. By 1865 and 1866 the placers had reached their zenith and were declining, although in after years, when the railways had cheapened transportation charges, and labor and other expenses had decreased, they again and steadily became fairly productive.

There have been many estimates made as to the production of the placers, but guesswork pure and simple must form a large part of each and all of them. I give a few of what seem to be the most reliable as approximately indicative of the yields of some of the gulches.

Bear gulch is stated to have produced in 1866–67, $1,000,000; Emigrant gulch, 1864–1867, $180,000; Ophir gulch, 1865–1867, $5,000,000; Confederate gulch, 1864–1868, $10,000,000; Last Chance gulch, 1864–1868, $10,000,000 [probably much more]; Alder gulch, 1863–1876, $60,000,000. These figures are taken from Williams & Wheeler's "History of Mining in Montana."

All agree that Alder gulch was the richest gulch, but there are no very close agreements on actual estimates, those for Last Chance gulch, for example, varying from $10,000,000 to $50,000,000 for total production to the present time. Colonel Wheeler estimated the total output for the territory, up to 1868, at more than $86,000,000, and he was good authority. In 1890 Dr. G. C. Swallow, a man of scientific attainments, than whom, probably, no better authority on Montana mines exists, in 1890 estimated the production of Alder gulch to have been from $100,000,000 to $137,000,000, and that of Last Chance gulch at from $20,000,000 to $50,000,000, and other

gulches in proportion. This, however, was after hydraulic mining had added greatly to the productivity of the gulches.

An estimate made by the *Financial and Mining Record* and found in *The Montana Mining Review* of September 4, 1889, gives the total production as follows:

| | |
|---|---|
| Gold, 1862 to 1888.. | $161,719,500 |
| Silver, 1862 to 1888. | 92,819,000 |
| Total.... | $254,538,500 |

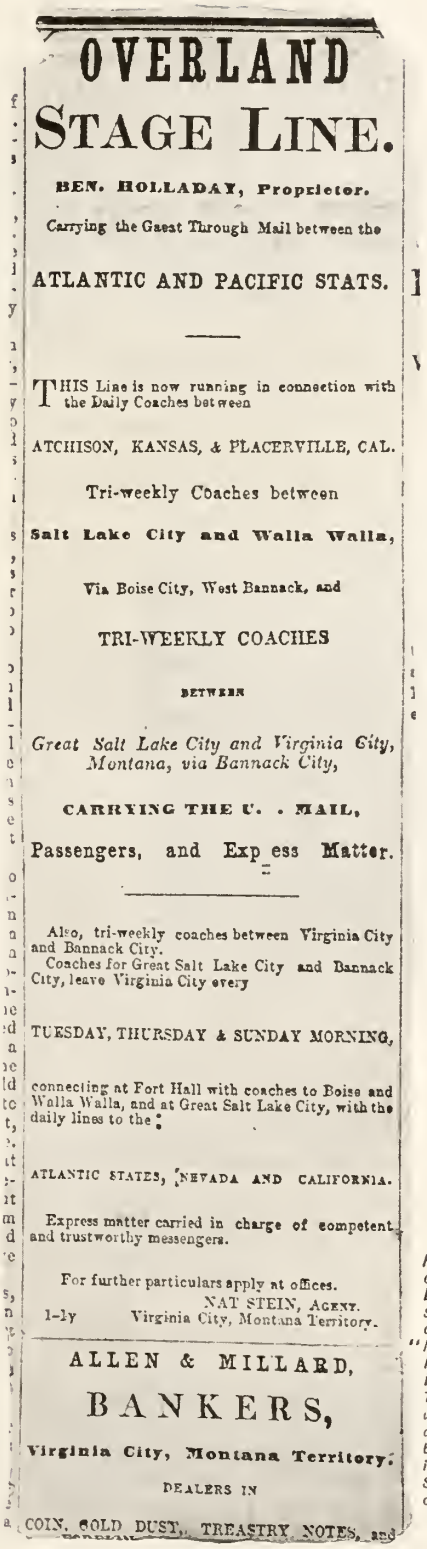
In September, 1889, Col. C. A. Broadwater had one bar of gold cast at the U. S. Assay Office at Helena, that was worth $101,385.50, and weighed 7,000 ounces. This was made out of gold taken from the Spotted Horse, Jay Gould, and Drum Lummon mines, and was sent East, where it attracted wide attention.

Some very large gold nuggets were found in the 60's. Many of these were worth from $100 to $600 or $700. Several were worth from $1,500 to $1,800; one, of pure gold, was worth $2,100, and two or three exceeded $3,000 in value.

## THE VIGILANTES.

The story of those earlier days would be incomplete were no reference made to a feature of them, at once tragic and serious and one much misunderstood by many. This is the work done by the Vigilantes in maintaining law and order and compelling a decent respect for the rights and lives of honest people.

It is difficult for an outsider to realize the cosmopolitan character of that early-day population. Along with honest hard-working men intent upon making a good livelihood, and perchance a fortune, there came, literally, perhaps, from the ends of the earth, many of the very reverse order. Thieves, thugs,



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*Facsimile of Ben. Holladay's stage coach advertisement, "Montana Post," in the 60's. The Millard whose name appears in the banking ad. is now U. S. Senator Millard, of Nebraska.*

*Road agent rock, on old stage road between Bannack and Dillon, Mont.*

fugitives from justice, outlaws, the riff-raff from all over the West,—and this means a long way *east* from Montana—adventurers of all sorts, poured into Bannack and Alder gulch intent upon luxuriously rioting in sin and violence where courts and constabulary were wanting. Secretly banding together, many of them, these road agents, as they were called, had their haunts, spies, places of rendezvous, etc., all over the region, so that it finally became a serious question whether any man suspected of having gold dust or money could possibly journey safely from one place to another, be the distance long or short, and to incur the ill-will of one of these men, from whatever cause, meant death. It is known that 102 persons were killed by these road agents and there were undoubtedly many more.

*The two stumps shown were part of the scaffold posts on which Chief Plummer and two other road agents were hanged, in 1864, at Bannack.*

To countervail the power of the road agents the Vigilantes were finally compelled to secretly organize. As all law comes from the people, so it did here. It was a last and serious effort, a forlorn hope, to enforce the spirit of the law where the usual legal adjuncts were lacking. It was really the essence of law without its technical forms, the kernel of the nut without its shell.

The men subject to the judgments of the Vigilantes were impartially tried, as they were previously by the miners' courts, without, however, the frivolous delays of the law, and the judgments were promptly executed.

As soon as officials and courts made their appearance, in 1864, and the regular legal machinery was set in motion, the Vigilantes voluntarily ceased to exist, and this fact is the best argument for the righteousness of the movement.

The principal centers at which the organization was active were Bannack and Virginia City, although there were branches at Last Chance and Confederate gulches. Under its domination the desperadoes were hung or banished, crime was punished, life and property rendered safe, and society rescued from a state of anarchy.

The best citizens of the territory were Vigilantes. Among them were Col. W. F. Sanders, a lion among lions, and afterward United

States Senator, Samuel T. Hauser, subsequently Governor of Montana; Judge Walter B. Dance; N. P. Langford, appointed by Andrew Johnson as Governor of Montana, and others of equal standing. Deeds of bravery more daring than those performed on the battle-field were done by some of these men. The heroism that was shown by Beachy, Sanders, Howie, Featherstone, Beidler, and others, will never be forgotten by the old Montana pioneers, and the State would honor itself as well as them by erecting a monument to them.

## HYDRAULIC MINING.

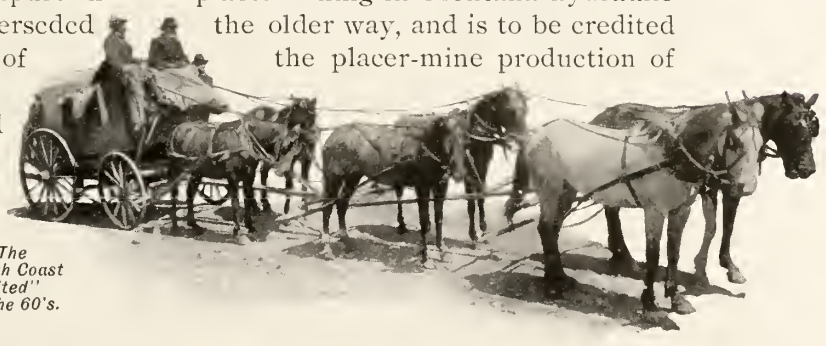
Hydraulic mining is but an extension or amplification of placer mining. In the latter the work done is limited by the quantity of water in, and the gradient of, the stream. A phenomenally rich streak of earth in the bank but little higher than the creek bed, may be absolutely worthless because the water can not be elevated to reach and wash it. Hydraulic mining makes the slopes of hills even hundreds of feet above a stream valuable. The water is taken from higher up the same creek perhaps, but oftener from other streams miles distant, and, by means of flumes and ditches carried along and around the sides of mountains at great expense and engineering ingenuity, is brought to the locality. It is then, by means of steel pipes and a firemen's hose nozzle on a large scale known as a Giant, turned directly upon a bank and the latter ripped and torn to pieces. The head of water varies from 200 to 600 feet, and the Giant nozzles have apertures of from two to six inches.

It is a wonderful sight to see one of these more powerful streams and larger nozzles cutting out a mountain side. The dirt flies in the air like spray, and the large rocks and bowlders are torn asunder and sent rolling along and away. The finer particles of dirt are, by this process, carried to the stream and into the sluice, as in placer mining pure and simple, and the gold is caught on the bottom by the riffles or cleats fastened there.

In order to successfully carry on hydraulic mining, the individual or company must own many claims (i. e., much ground), on account of the great expense necessary in constructing dams, flumes, reservoirs, etc. Mr. Clark estimated, in 1876, that there were then in Montana about 600 miles of ditches and flumes which had cost $1,000,000.

After the first spurt in placer mining in Montana hydraulic mining largely superseded the older way, and is to be credited with a large part of the placer-mine production of the State.

It is still carried on quite extensively even among the old gulches,

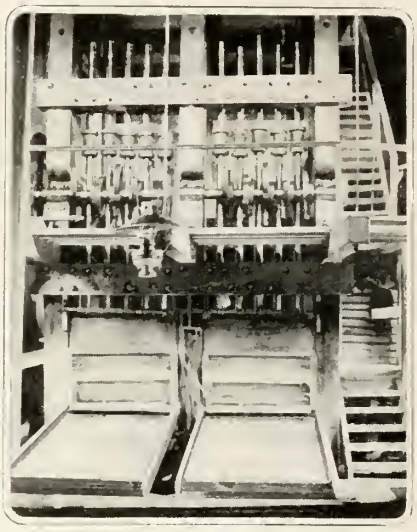


*The "North Coast Limited" of the 60's.*

and, of late years, ground that in early days was not rich enough to pay can now be thus worked at good profit.

## DREDGE MINING.

Another phase of placer mining is that of dredging, either dry or wet, principally the latter. By this method, a comparatively recent one, ground that is unavailable by either the primary or hydraulic process, is made workable. In dry dredging the dredge is mounted on a car and track, and is quite similar, both in its construction and operation, to the steam shovel dredge used by railway companies.



*Interior of a stamp mill.*

In wet dredging there must first be constructed a reservoir of sufficient size and depth to float the dredge, which is a huge, heavy, and cumbersome affair, costing from $40,000 to $75,000. It must be strongly built in order to be successful, a weak, faultily constructed machine being foredoomed to failure.

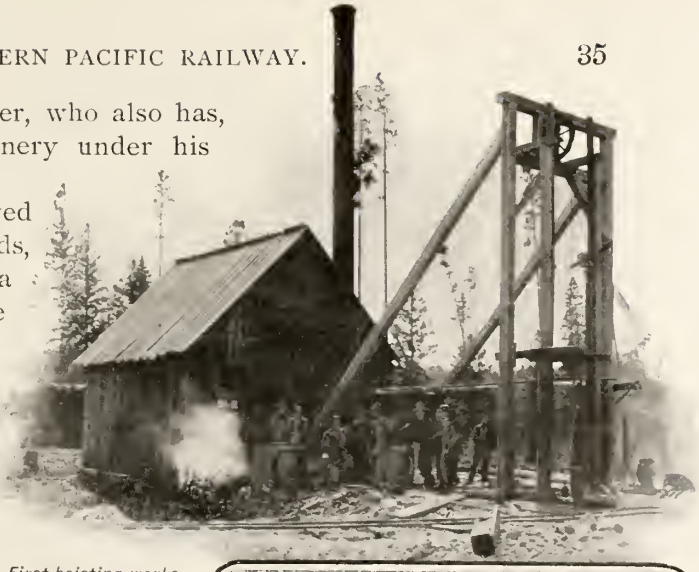
*Old mining flumes in Deer gulch, Mont., used in hydraulic mining.*

The dredge is provided, on the front end, with a series of very durable steel buckets on an endless chain which, running down and under the water, scoop the dirt and bowlders from the bank and then elevate their contents and dump them into a hopper on the dredge. The material is then discharged into a perforated metal and revolving screen, from which the larger stones, etc., pass into a stone chute and are discharged into the water, while the gravel, washed by a stream of water playing into the screen, passes from it through the perforations into a sluice-box where, as in the other processes, the gold is caught by the riffles on the bottom. The remainder, or worthless residuum, is carried by the sluice stream to the rear of the dredge, where it is dumped, making new ground and filling the reservoir at one end while the buckets excavate and extend it at the other. The movement of the buckets is slow, and their manipulation is in the hands of a man stationed at the top of the dredge

like a pilot on a steamer, who also has, virtually, all the machinery under his control.

The dredge is moved about as occasion demands, being, at the close of a season, perhaps a mile away from where it began work.

At the mouth of Alder gulch I saw a dredge scooping up a fine alfalfa field recently purchased, test holes and washings having disclosed the presence of gold in paying quantities.



*First hoisting works of a mine after the windlass stage.*

A large dredge with four feet displacement will excavate, on an average, 2,000 cubic yards per day.

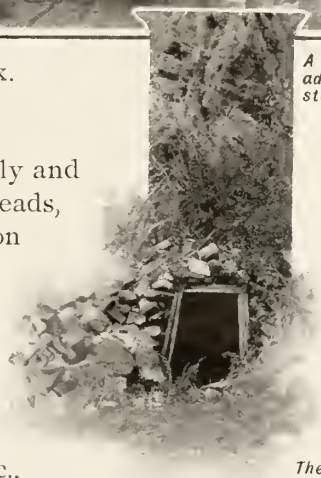
The Gold Dredging Company, at Bannack, has in the last five years shipped away $500,000, the results of its dredging operations, from two dredges, I think.

*A mine in its adolescent stage.*

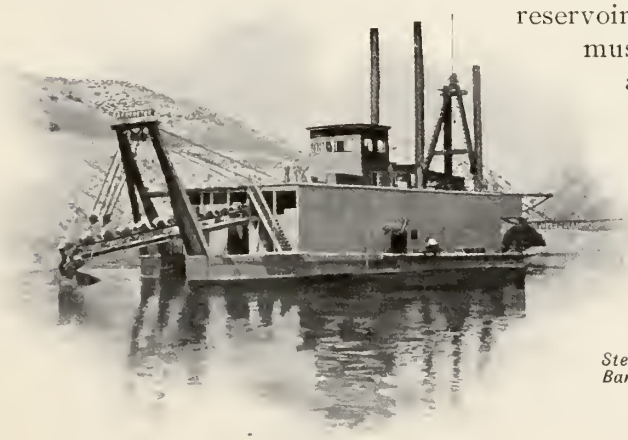
## LEDGE MINING.

To ledge mining all other methods lead finally and logically. This is simply finding the ore ledges, leads, or lodes by tunnels or shafts, sinking down upon them and excavating the quartz or ore, and finally separating the gold, silver, and copper by chemical process.

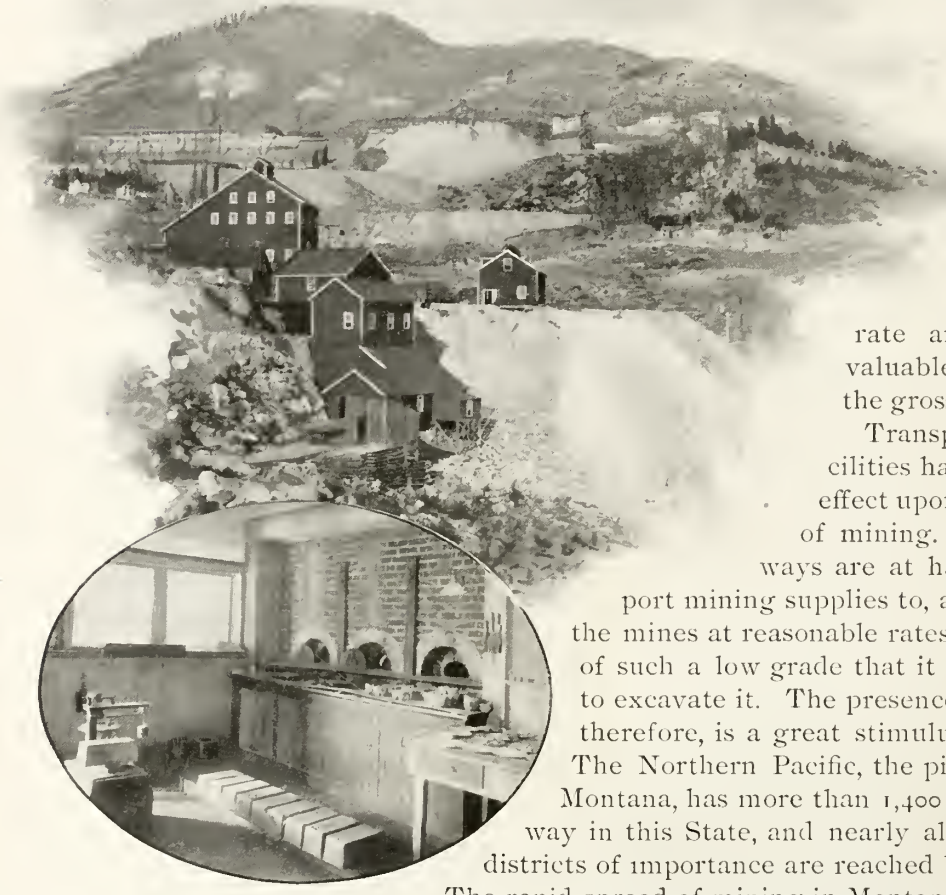
To successfully prosecute ledge mining requires a heavy capitalization. Hoisting works, concentrators, smelters, reservoirs, etc., must be erected and the heaviest and most expensive machinery be installed. The ore is first crushed to powdery fineness and then, by various methods, depending upon its character, is



*The first chapter of ledge mining.*



*Steam dredge, Bannack, Mont.*



*Granite mine, Granite, Mont.*

so treated as to separate and save the valuable metals from the grosser materials. Transportation facilities have a material effect upon this method of mining. Unless railways are at hand to transport mining supplies to, and ore from, the mines at reasonable rates, much ore is of such a low grade that it does not pay to excavate it. The presence of railways, therefore, is a great stimulus to mining. The Northern Pacific, the pioneer line in Montana, has more than 1,400 miles of railway in this State, and nearly all the mining districts of importance are reached by it.



*Granite Mountain Mining Co.'s assay room.*

The rapid spread of mining in Montana, once it was fairly started, precludes any attempt to further trace,

in detail, its expansion. The rise of silver mining gave a tremendous impetus to the industry and the development of copper mining greatly accentuated it. As the production of silver and copper greatly exceeds that of gold, the depression in the silver market a few years ago likewise seriously and unfavorably affected the industry, and for several years now the so-called silver mines have been closed. Recently, however, for one reason or another, some of them have been reopened and appear to be in greater or less degree in successful operation again.

## PROMINENT MINES AND MINING CAMPS.

Within the borders of the Treasure State there have been some of the most profitable mines and best known mining camps in the United States, and the largest mining camp in the world to-day, Butte, is the chief city of Montana.

At Phillipsburg, Granite County, are what have been claimed to be the greatest silver mines in the world. From 1883 to 1898 the Granite-Bimetallic Mines, now consolidated, produced more than $29,000,000, and paid in dividends nearly $14,000,000. These mines are models, have stamp mills aggregating 280 stamps, and a fine leaching plant. As showing the difficulties that beset mining it is stated that these mines have one million tons of tailings — or the refuse of ores that have passed through the mill — on the dump, which, while containing millions of dollars in silver and gold, have as yet proven refractory to all known processes of working tailings. These values will yet be extracted, however.

As Granite County is a silver producing county, so Lewis and Clarke County, in which Helena and Marysville are situated, is gold producing. Since the financial depression of 1893 the gold output here has rapidly increased, and since 1863 the county is reputed to have produced $60,000,000 of gold.

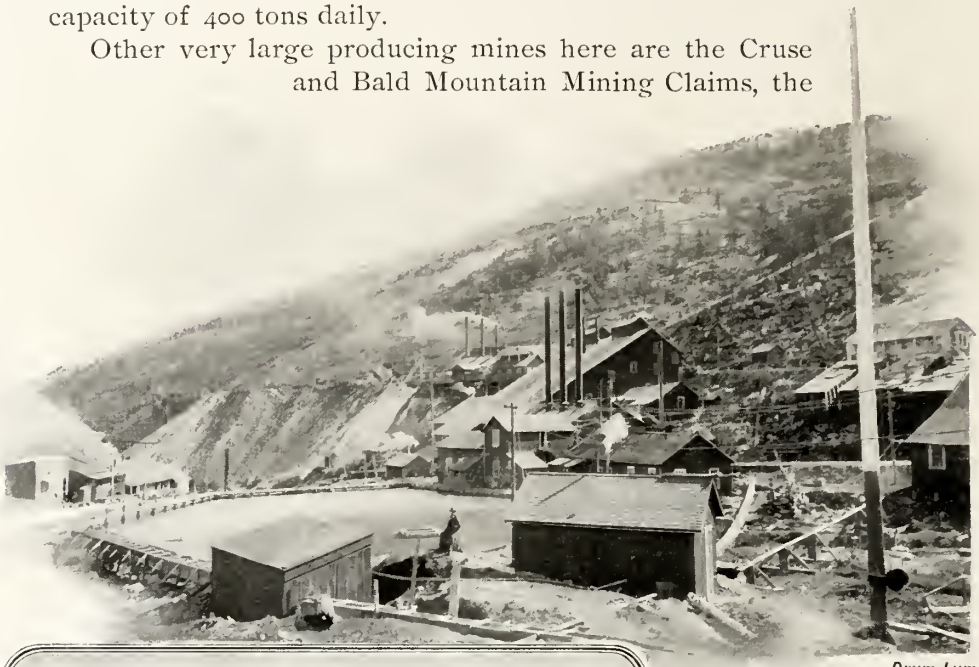
*St. Louis mill, near Marysville, Mont.*

The gold belt here is miles in width and the principal camp is Marysville, just north from Helena, and the terminus of the Marysville branch of the Northern Pacific.

The great mine there is the Drum Lummon, discovered in 1876 by Thos. Cruse, now a wealthy banker of Helena. It is owned by the Montana Mining Company, an English corporation, and in its twenty years of life has turned out $19,000,000.

The Drum Lummon has a mill of 110 stamps, and a large cyanide process plant for treating its heavy accumulation of tailings, with a capacity of 400 tons daily.

Other very large producing mines here are the Cruse and Bald Mountain Mining Claims, the Belmont, and Bald Butte, while there are many others whose output is large.



*Drum Lummon mill, Marysville, Mont.*

*Marysville, Mont.*

The Bald Butte is producing so well that during the latter part of 1900 it paid dividends at the rate of 6 per cent a month, and in its ten years of steady dividends it has thus disbursed about $1,000,000.

Fine copper fields have been found in this county, and it now appears as if very valuable copper deposits existed on Mt. Helena, within the residence limits of Helena itself, and also along the main line of the Northern Pacific in the mountains just west from Helena.

As showing that the prospector still has a good field to work in Montana, one of the guild recently found a prospect in Blue Cloud Gulch, from which he took rich ore worth $5,000 in less than one week.

At East Helena there is a very large silver-lead smelter, the

*The old and the new Helena. Miners' cabins in the gulch, public library, etc., above.*

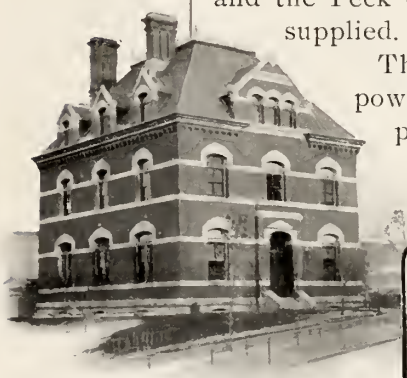
capacity of which has recently been doubled, and is now 300 tons It is a thoroughly equipped smelter, and is run to its full capacity.

In this connection attention should be called to the large dam and power house recently built at Cañon Ferry, on the Missouri river, east of Helena, by the Missouri River Power Company.

This company furnishes electricity to both Helena and Butte, not only for the usual uses of a city, but to a large extent for mining purposes. The East Helena smelter and the Peck concentrator, near by, are both thus supplied.

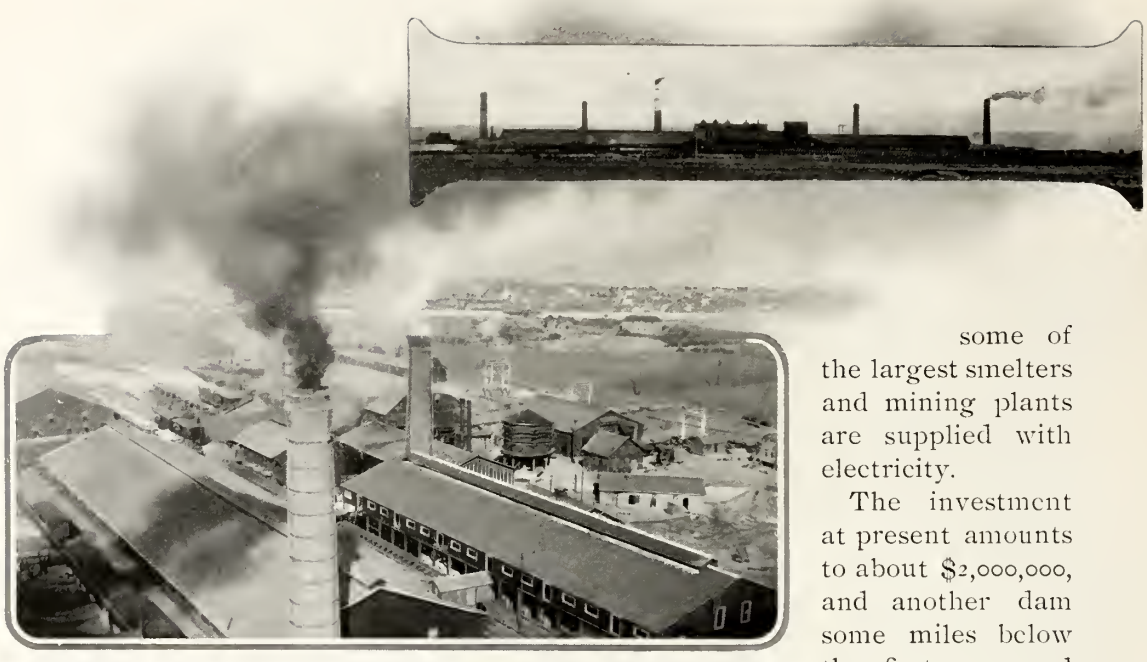
The company's dam is thirty feet high, and power is furnished by ten dynamos of 1,200 horse-power each, and is conveyed by pole lines to both Helena and Butte. At the latter point

*Montana Club building, on site of discovery of Last Chance gulch.*



*U. S. assay office, Helena.*

*The beginning of the city of Helena.*



East Helena smelter.

some of the largest smelters and mining plants are supplied with electricity.

The investment at present amounts to about $2,000,000, and another dam some miles below the first one, and which will equal it in size, is in process of construction.

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What the Comstock lode, Virginia City and Gold Hill were to the mining world in the good old bonanza days, Butte, in Silverbow County, and Anaconda, in Deer Lodge County, now are, with their many and deep mines and enormous smelters.

It is stated that within a circle having Butte as its center, and a diameter of four miles, more mineral wealth is produced annually than the entire state of Colorado furnishes in the same length of time.

It was some years after the first discoveries at and around Butte, before any inkling of the real value of the ore deposits there dawned upon the world.

In its early days Butte passed through the usual vicissitudes of a young mining camp. It had its periods of inflation and depression, and it was not until 1875 and 1876 that a permanent set was given to the current of mining events that has run with increasing force in one direction ever since.

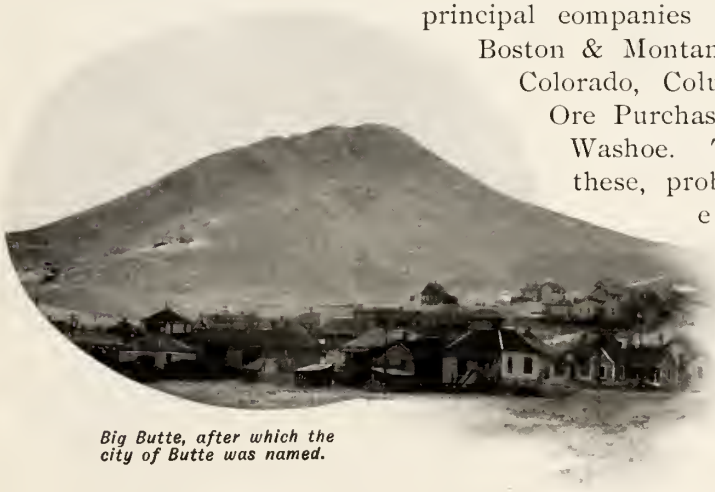
Gen. Charles S. Warren, an old resident of Butte and Montana, and one thoroughly versed in its affairs, in an historical address delivered in 1876 ( Historical Society of Montana, Contributions, Vol. II ), draws a graphic picture of those days.

Out of a list of names of men to whom Butte and Montana owe much, a list too long to be given here, two, Wm. L. Farlin and Wm. A.

*Dam and electric power plant on Missouri river. Power transmitted to Helena and Butte. Power developed — 12,000 horse-power.*

Clark — now United States Senator Clark — seem to deserve special notice. Farlin, on January 1, 1875, relocated the Travona lode and then energetically developed it. Warren says: "A new era opened to Butte * * * * Never before in Montana had such a lode been discovered." New discoveries and developments now followed rapidly. Farlin soon began the erection of a 10-stamp quartz mill, but in December, 1875, his means failing, work was suspended and gloom settled down. Wm. A. Clark, a man of means, business ability and metallurgical knowledge, stepped forward, finished the mill and all went merry as a marriage bell. Mr. Clark has reaped a rich harvest from that and his other ventures in Montana.

It would be interesting, did space permit, to relate in detail the story of some of the Butte mines. Many of the old mines or claims are now combined under corporate ownerships and the individuality of the mine is more or less lost in the company. Some of the mines that now are, or have been noted in their day, are the Alice, Lexington, St. Lawrence, Neversweat, High Ore, Anaconda, Parrott, Mountain View, Gagnon, Colusa-Parrot, Rarus, Original, and Green Mountain. In some of these silver predominates, in others copper. The principal companies are the Anaconda, Boston & Montana, Butte & Boston, Colorado, Colusa-Parrot, Montana Ore Purchasing Co., Parrot, and Washoe. The best known of these, probably, is the Anaconda, which, from moderate beginnings, has grown to be an enormous concern, and a brief recounting of



*Big Butte, after which the city of Butte was named.*

*Butte, in 1875.*

*School of mines, Butte.*

the discovery and exploitation of this mine and the growth of the company must serve for all.

In 1866, when copper was but just attracting attention, M. A. Hickey, who was placer mining for gold northwest of Butte, picked up some carbonate of copper on the Anaconda shaft hill. He at once divined that a copper lead lay there, but he was searching for gold, not copper or silver, and made no location. Ten years flew by with their developments and, strangely enough, no one else had taken up the ground, and so, in 1876, Hickey finally located the Anaconda, and his brother the St. Lawrence immediately adjoining.

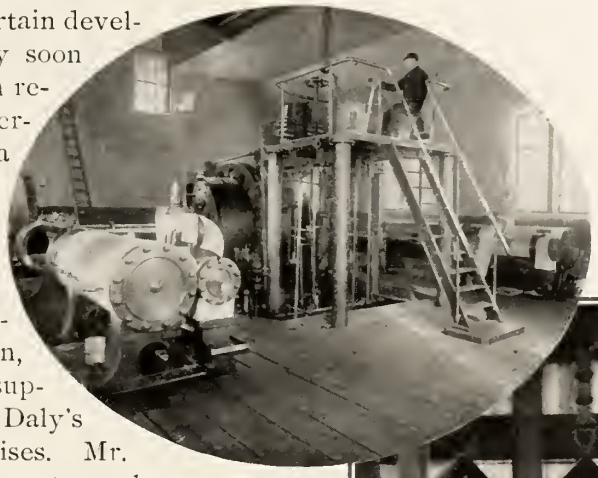
I have mentioned two men to whom Butte is under obligations—I now name a third, the late Marcus Daly, to whom, in late years, the city was more indebted for its prosperity, undoubtedly, than to any one man.

Mr. Daly, an old Comstock miner, was superintendent of the Alice mine when the Hickeys were working their claims, and he appeared to possess a keen insight into the future of Butte. He bought the St. Lawrence for about $125, and M. A. Hickey gave him a one-third interest in the

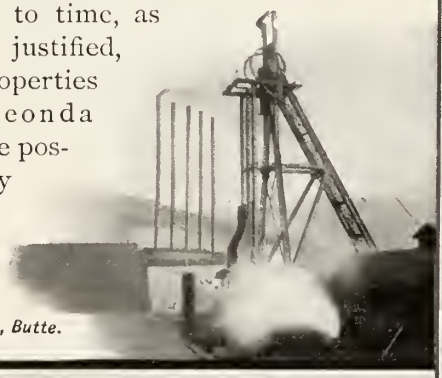
*A Butte concentrator.*

Anaconda for doing certain development work. Hickey soon afterward sold his own remaining one-third interest—he having given a friend a one-third—to Daly for $10,000, and this was the genesis of the great Anaconda Copper Mining Company Mr. J. B. Haggin, of San Francisco, is supposed to have been Mr. Daly's backer in his enterprises. Mr. Daly pushed development work and, from time to time, as circumstances justified, added other properties until the Anaconda company became possessed of many valuable mines.

Mr. Daly



*Hoisting engine, Nipper mine, Butte.*



*New style steel hoisting gallows, St. Lawrence mine, Butte.*

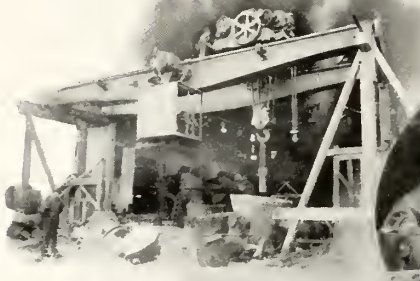
*"Ready to lower." Descending a deep mine shaft, Butte.*

*Gagnon mine, Butte.*

soon saw the possibilities of copper mining, and energetically exploited that phase of the situation, eventually building the town of Anaconda, twenty-six miles west of Butte, where the greatest plant in the world for the reduction of copper ores was constructed, and to which has just been

*Old Lexington mill, Butte.*

added another mammoth plant of the same sort, costing five and one-half millions of dollars. The company also built and splendidly equipped a first-class railway between Butte and Anaconda. The original smelting plant was entirely supplied by ores from the company's own mines, and they were hauled from mines to smelters on its own trains.



*A 60-ton crane in a Butte smelter.*

In recent years, this and nearly all the other copper mining interests around Butte and Anaconda have been merged in the Amalgamated Copper Company, of which Mr. Daly was president at the time of his death. The capacity of the old works at Anaconda is about 4,800 tons of crude ore daily; that of the new, 5,000 tons.

*Converter room in a Butte smelter.*

Besides the Anaconda, the Colorado Smelting & Mining Company, the Butte & Boston, the Boston & Montana, the Parrot Silver & Copper Company, the Butte Reduction Works, the Colusa-Parrot,

*Matte floor in a Butte smelter. Matte slabs at the right.*

*A Butte smelter.*

and the Montana Ore Purchasing Company, all own smelting works, and the Boston & Montana Company also have a large smelter at Great Falls.

*Dumping slag by electricity at Butte.*

*General view of the new Washoe smelting plant of the Anaconda Company at Anaconda.*

Mining is seen in its most advanced and scientific aspects at Butte and Anaconda. Electricity and compressed air are employed wherever possible, and in the construction of hoisting works, smelters, concentrators, etc., the latest ideas are utilized and the best machinery installed. The old wooden hoisting gallows enclosed in buildings are being replaced by splendid steel gallows standing in the open, the ventilation of the mines being much improved thereby.

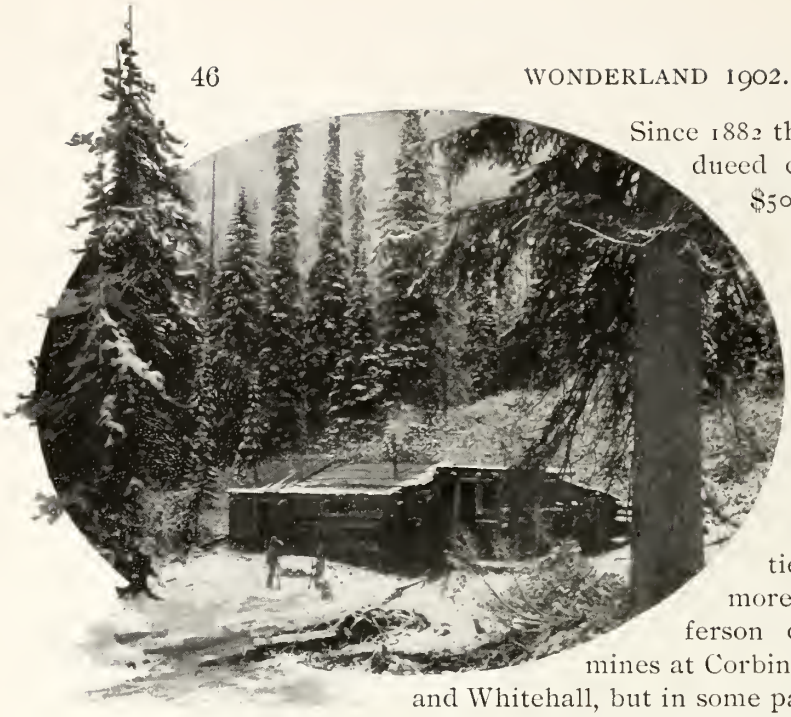
*Water Flume in Walker's gulch, that supplies New Anaconda works.*

The production, financial operations, etc., of these corporations are on a colossal scale. There were employed in the mines of Butte during 1900, nearly 8,700 men; the monthly disbursements, largely among the mines and smelters, were almost $2,000,000; the dividends paid amounted to a little less than $14,000,000, and the mine production, gold, silver, and copper, was $50,000,000.

*Self-supporting steel stack. Base, 30 feet, Diameter, 20 feet, Height, 225 feet.*

In the last ten years these mines have paid in dividends more than $43,000,000.

*Concentrator at new Anaconda works.*



Since 1882 the Butte mines have produced considerably more than $500,000,000, in proportions, approximately, of gold 3 per cent, silver 35 per cent, and copper 60 per cent, and they now furnish about 25 per cent of the copper output of the world.

*Miner's cabin, Leslie mine, in winter months.*

In all the mountain counties of the State there is more or less mining. In Jefferson county there are good mines at Corbin, Wickes, Basin, Elkhorn, and Whitehall, but in some parts of this region refractory ores have operated against development.

In Madison county there are many promising mines and prospects

*Elkhorn, Mont.*

*"The Cordwood Transportation Co." Elkhorn, Mont.*

at or near Pony, Norris, Red Bluff, Virginia City, Sheridan, Twin Bridges, and Rochester.

In Broadwater county old mines which were supposed to have been worked out are now producing better than ever, and Winston, Radersburg, and Hassel are well-known camps.

*The Lake Shore mine, Madison Co., Mont.*

*A mine near Pony.*

*One method of ore transportation across the mountains in Madison Co. 7 miles long.*

In Park county mining has been carried on for years at Crevasse and Cooke City, and in Meagher and Fergus counties the prospects are sufficient to justify great hopes for the future. The railways have but recently penetrated this latter section. The Spotted Horse mine is noted among Fergus county mines, having produced at least $2,500,000. The cyanide process is largely used in this section.

Granite, Powell, Ravalli, and Missoula counties have mines that are being profitably worked, but some drawbacks have existed in these parts of the State that the future will doubtless remedy. The future in this section seems now quite promising.

## OUTPUT OF PRECIOUS METALS.

Montana now ranks fifth in gold, second in silver, and first in copper production in the United States.

As before remarked, there is little agreement in estimates of Montana's mineral output. Doctor Swallow places the total yield of *gold* from 1862 to 1894 at $212,000,000; Commissioner Calderhead of Montana, in his report for 1900, makes the total for the same period about

$240,000,000. The latter gives the total production of precious metals — I use round numbers — 1862–1899, inclusive, as follows:

| | |
|---|---|
| Gold | $267,600,000 |
| Silver | 314,000,000 |
| Copper | 284,500,000 |
| Lead | 11,500,000 |
| Total | $877,600,000 |

For the years 1898, 1899, and 1900 the output, as given by Mr. Calderhead, was:

| | 1898 | 1899 | 1900 |
|---|---|---|---|
| Gold | $ 5,247,913 | $ 4,819.157 | $ 4,960,000 |
| Silver | 19,159,482 | 21,786,835 | 21,607,500 |
| Copper | 26,102,616 | 40,941,906 | 41,246,250 |
| Lead | 809,056 | 909,410 | 909,410 |
| Total | $51,319,067 | $68,457,308 | $68,723,160 |

*Miner's Cabin — Gold Hill — in winter.*

In gold and silver production, Silver Bow county leads with $14,000,000; followed by Granite county, $2,700,000; Lewis and Clarke county, $1,500,000; Jefferson county, $1,300,000; Cascade county, $1,200,000, etc.

From present indications it is a reasonable prediction that, barring a permanent slump in the market, the mineral production will steadily increase, for the prospects of precious metal mining in the Treasure State were never brighter than at present, and that, too, over the entire mineral belt.

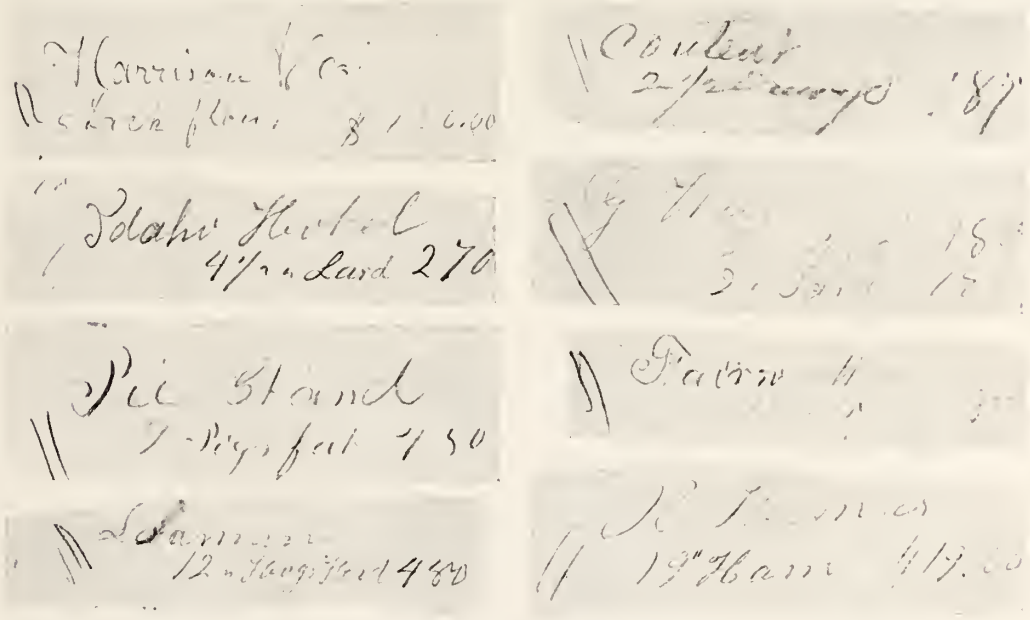
As a matter of interest I give a partial list of mines in the State that have been sunk to a depth of more than 500 feet, the most of the deeper ones being at Butte:

| Name of Mine | Depth | Name of Mine | Depth |
|---|---|---|---|
| Anaconda | 1,800 | Original | 1,200 |
| St. Lawrence | 1,600 | Rarus | 1,200 |
| Never Sweat | 2,000 | Minnie Healey | 800 |
| High Ore | 2,200 | Alice | 1,500 |
| Bell | 1,650 | Blue Wing | 650 |
| Diamond | 2,200 | Magna Charta | 700 |
| Green Mountain | 2,200 | Ella | 500 |
| Mountain Con. No. 1 | 2,000 | Speculator | 1,200 |
| Parrot | 1,600 | Drum Lummon | 1,600 |
| Pennsylvania | 1,400 | Mayflower | 980 |
| Mountain View | 1,700 | Kennet | 600 |
| Gagnon | 1,800 | Granite | 1,600 |
| Silver Bow No. 1 | 1,000 | Bi-Metallic | 1,700 |
| Blue Jay | 1,075 | Hope | 550 |
| Berkeley | 900 | North Pacific | 550 |
| Colusa-Parrot | 1,400 | | |

## LIFE IN MINING CAMPS.

Life in mining communities, particularly in the earlier time, was kaleidoscopic. Aristocracy was at a discount. The good and the bad, the prince and the pauper, were forced to touch elbows whether or no. Human nature was revealed to its fullest extent, and the strong and unselfish, the weak and degrading instincts of mankind and womankind were developed with hothouse rapidity. Remote from telegraph lines, railways, and cities, commerce with the States was infrequent, mail facilities meager and costly, living expensive, and news of the world and reading matter conspicuous by its absence.

The great battles and campaigns in the year 1862 of our Civil War were not known in Bannack until the spring of 1863 ("Vigilante Days and Ways," Langford, Vol. I); letters were carried between Salt Lake City and Bannack at a cost of $1 each; the first lumber sold in Virginia City — hauled from Bannack — cost $250 per thousand feet.



Those who owned ranches reaped a rich harvest. Potatoes sold at the ranches for $3 to $6 per bushel; wheat for $3 to $4 per bushel, and seed wheat for $10; poor flour readily brought $30 per hundred pounds. In the winter and spring of 1864–65 there was a flour famine in the territory, flour riots at Virginia City, and in May, 1865, flour was selling in Helena at $110 per hundred pounds. These prices are in gold; greenbacks were worth 45 to 50 cents on the dollar.

While at Virginia City, in 1901, I inspected an old day-book kept by George Gohn in his meat market in 1865–66, and Mr. Gohn allowed me to cut from its pages the above debit items, which show the prices

charged for meat at that time. Pork was a scarce article. The Fair-weather named was "Bill," the discoverer of Alder gulch.

In looking through a municipal license record of Virginia City for 1866, it was disclosed that the following prices were charged for licenses to do business at that time:

| | | |
|---|---|---|
| Wholesale Liquor Dealers | $25.00 | per quarter. |
| Theaters | 25.00 | " " |
| Saloons | 37.50 | " " |
| Auctioneers | 25.00 | " " |
| Gambling Houses | 75 00 | " " |
| Dance and Hurdy-Gurdy Houses | 150.00 | " month. |

I note as facts of historic interest that Montana was made a territory in 1864; the first Governor was Sidney Edgerton of Ohio, appointed in 1864 by President Lincoln; the first Chief Justice was H. L. Hosmer, also of Ohio, appointed in 1864, and the first court met at Virginia City in December, 1864. The first legislature met in the same year at Bannack, and the first paper, the Montana *Post*, was published in 1864 at Virginia City.

☞Lecture to commence precisely at eight o'clock. Tickets, $8.00 69-1t

**Notice.**

WE, THE UNDERSIGNED, MERCHANTS AND business men of Virginia City, thinking it is our duty to ourselves and to those in our employ to observe the Sabbath Day: Therefore, we do hereby agree to close our respective places of business on that day of each week, from and after, January 1st, 1866.

| | |
|---|---|
| John S. Rockfellow. | E. Olinghouse & Co., |
| Nowland & Weary, | Gorham & Patton, |
| Allen & Millard, | Wm. Douglas. |
| Tutt & Donnell. | Davis, Housel & Co.. |
| Hanauer, Salomon & Co.. | P. D. O. Maxham. |
| McCormick, Ohle & Co.. | D. C. Farwell. |
| J. J. Roe & Co.. | John Kinna. |
| F. G. Heidt. | N. J. Butler. |
| G. W. Hill, Co. Recorder. | Geo. H. Hanna & Co. |
| John How. | Barrows & Ellis. |
| F. Deimling. | Higgins & Haggadorn. |
| Tootle, Leach & Co.. | S. Star, |
| E. A. Collins. | Lewis, Hale & Co., |
| John F. Rucker. | T. K. Mulk, |
| James M. Vivion. | D. W. Tilton & Co.. |
| Jno. P. Bruce. | Wm. Deascey, |
| J. H. Ming. | Jno. Curton. |

*From the "Montana Post" in 1865.*

To prove that the moral and religious element was not wanting at this time, I will state that Father Ravalli, of many among the Catholics, and Bishop Tuttle and the late Bishop Gilbert of the Protestant Episcopal Church, are examples of many who spent their early ministerial days in rough and isolated Montana. The facsimile of a "Notice" shown on this page as it appeared in the Montana *Post*, indicates that the Lord's Day was not entirely forgotten.

To the women and girls of refinement life must have seemed a strange compound. To live where the crack of the rifle or revolver was frequent, where boisterous conduct, profanity and carousing were common and life in general wore its roughest aspect, must have

**MONETARY.**

REPORTED BY ALLEN AND MILLARD, BANKERS.

VIRGINIA CITY, Jan. 28, 1865.

Exchange on N. Y., selling for T. N. at 3 per cent. prem.

Exchange on N. Y., selling for coin at 5 per cent. premium.

Treasury Notes, buying at 50 cts., for dust.
" " selling at 60 cts., for dust.

Gold Dust, buying at $30 09 per ounce in T. N.

GoldDust, buying at $14 00 to $15 00 for coin.

Coin buying at 10 per cent. premium in dust.

*From the "Montana Post" of January 28, 1865.*

seemed to many a woman as if existence was one long nightmare.

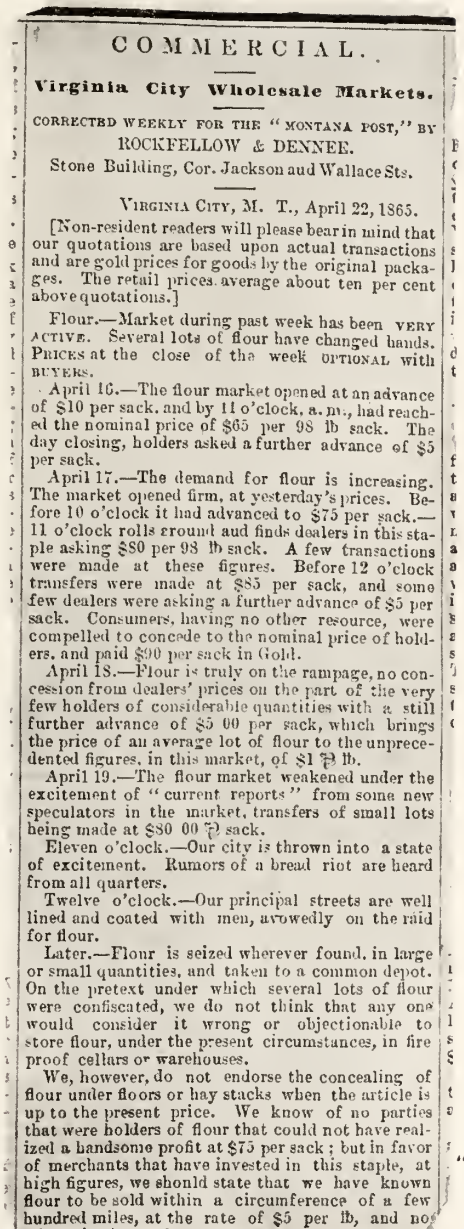
Early in 1863, it is stated, the first white girl reached Alder gulch. This little miss subsequently became Mrs. Peter Ronan, and she has now a family of her own grown. At my request Mrs. Ronan has briefly sketched a flitting picture of her girl life in those days which must be read between the lines to be fully appreciated. She says:

"When rememorating the tumultuous scenes of the stirring days of Alder gulch from 1863 to 1865, over and above all else, my mental vision rests upon the long rows of sluice boxes into which, as a little girl, I used to watch the miners shovel the gold-laden soil.

"In those days there were often social gatherings in the evenings—the log houses were lighted with tallow candles, and, in some of them, great wood fires burned in the chimneys built of various shaped stones. Refreshments were served, and, when flour was worth one dollar a pound, even bread was a luxury.

"Divine service was held for the first time in Alder gulch in the fall of 1863, by Rev. Joseph Giorda, S. J. The cabin in which the holy sacrifice of the mass was celebrated was crowded with miners, and a few women and children. During the time of prayer, all knelt on the earth floor, utterly oblivious of their rude surroundings.

"From this religious spectacle my thoughts enter an unfrequented chamber of memory in which is a kind of Blue Beard apartment. Upon its walls, in lurid, unfading colors, are depicted ghastly scenes which affright me to recall even at this far distant time. Vividly do I remember an evening when I was sent on an errand to a store and barely escaped being shot by Slade, who was indulging in the pleasant pastime of shooting up and down the main street of Virginia, regardless



COMMERCIAL.

**Virginia City Wholesale Markets.**

CORRECTED WEEKLY FOR THE "MONTANA POST," BY
ROCKFELLOW & DENNEE.
Stone Building, Cor. Jackson and Wallace Sts.

VIRGINIA CITY, M. T., April 22, 1865.

[Non-resident readers will please bear in mind that our quotations are based upon actual transactions and are gold prices for goods by the original packages. The retail prices average about ten per cent above quotations.]

Flour.—Market during past week has been VERY ACTIVE. Several lots of flour have changed hands. PRICES at the close of the week OPTIONAL with BUYERS.

April 16.—The flour market opened at an advance of $10 per sack, and by 11 o'clock, a. m., had reached the nominal price of $65 per 98 lb sack. The day closing, holders asked a further advance of $5 per sack.

April 17.—The demand for flour is increasing. The market opened firm, at yesterday's prices. Before 10 o'clock it had advanced to $75 per sack.—11 o'clock rolls around and finds dealers in this staple asking $80 per 98 lb sack. A few transactions were made at these figures. Before 12 o'clock transfers were made at $85 per sack, and some few dealers were asking a further advance of $5 per sack. Consumers, having no other resource, were compelled to concede to the nominal price of holders, and paid $90 per sack in Gold.

April 18.—Flour is truly on the rampage, no concession from dealers' prices on the part of the very few holders of considerable quantities with a still further advance of $5 00 per sack, which brings the price of an average lot of flour to the unprecedented figures, in this market, of $1 ₱ lb.

April 19.—The flour market weakened under the excitement of "current reports" from some new speculators in the market, transfers of small lots being made at $80 00 ₱ sack.

Eleven o'clock.—Our city is thrown into a state of excitement. Rumors of a bread riot are heard from all quarters.

Twelve o'clock.—Our principal streets are well lined and coated with men, avowedly on the raid for flour.

Later.—Flour is seized wherever found, in large or small quantities, and taken to a common depot. On the pretext under which several lots of flour were confiscated, we do not think that any one would consider it wrong or objectionable to store flour, under the present circumstances, in fire proof cellars or warehouses.

We, however, do not endorse the concealing of flour under floors or hay stacks when the article is up to the present price. We know of no parties that were holders of flour that could not have realized a handsome profit at $75 per sack; but in favor of merchants that have invested in this staple, at high figures, we should state that we have known flour to be sold within a circumference of a few hundred miles, at the rate of $5 per lb, and no raiders in the market.

*Market report taken from "Montana Post" of April 22, 1865.*

**Virginia City Wholesale Markets.**

CORRECTED WEEKLY FOR THE "MONTANA POST."
BY
ROCKFELLOW & DENNEE.

Stone Building, Cor. Jackson and Wallace Sts.,

VIRGINIA CITY, M. T., Jan. 28, 1865.

Non-resident readers will please bear in mind that our quotations are based upon actual transactions and are Gold prices for goods by the original packages. The retail prices average about ten per cent. above quotations.

Flour.—Demand limited and prices are nominal. We have no change to make in prices. It is generally conceded that our quotations are the ruling prices.

Bacon.—Firm.

Lard.—Less active: demand small; good stock in market; Holders notwithstanding are firm.

Sugars advancing.

Coffee.—In demand, at an advance of 2½ cents per pound.

Candles.—Less active in consequence of the decline in coal oil.

We quote to-day as follows:

| | |
|---|---|
| Flour—St. Louis, per 98 lb. sack | $26 50 |
| " —States | 24 00 |
| " —Salt Lake | 23 00 |
| Corn Meal | ..... |
| Bacon | 60 @ 65 |
| Lard | 60@ 65 |
| Hams s c | 57@60 |
| Beef, corned, Cin., | 16 |
| Pork Prime Mess | ... |
| Sugar N. O. | 75@80 |
| " A refined y | 75@80 |
| " Powdered | 85@ 90 |
| " Crushed | 80 |
| Molasses S H per 10 gal keg | 60 00 |
| Belche'rs Golden Syrup, per 10 gal keg | 65 00 |
| Tea Imperial | 2 50 |
| " Young Hyson | 2 50 |
| " California Natural Leaf | ..... |
| Coffee Rio | 75@77½ |
| " Java | ... |
| Dried Apples | 37½ |
| Dried Peaches States | 65 |
| " " New Salt Lake | 70 |
| Dried Currants, Cherries, Black Berries, and Rasp Berries | 70 |
| Cheese Hamburg | 70 |
| " Western Reserve | 65 |
| " English Diary | 70 |
| Butter States | 125 @ 135 |
| " St. Louis packed | 150 |
| " Salt Lake | 130@140 |
| " Ranche | 160@175 |
| Beans, navy | 30 |
| " Chili | 35 |
| Potatoes, | 18 |
| Oats, | 15 |
| Barley, | 16 |
| Onions, | 17 |
| Turnips, | 05 |
| Beets | 08 |
| Candles, Star | 75@90 |
| " Tallow | 45@50 |
| Saleeratus, and Soda | 45 |
| Soap Palm St. Louis | 35 |
| " " St. Joe | 30 |
| Nails, per keg | 42 50@47 00 |
| Can'd fruits | 25 00@28 00 |
| Can'd Oysters | 28 00@30 00 |
| Coal Oil, per gal | @9 00 |
| Linseed Oil | 10 00 |
| Crackers, Soda | 50 |
| " Butter | 50 |
| Tobacco, Lewis & Bro. natural leaf, | 1 75 |
| " No. 1, Plug | 1 50 |
| Lower grades rates from | 60@1 35 |
| Pepper grain | 90 |
| " ground | 75 |
| Rice | 40 |
| Hominy, | 30 |
| Raisins, per box, | 18 00 |

*Price list taken from "Montana Post" of January 28, 1865.*

of whom might receive one of the playful bullets. Not long after this occurrence, on a still afternoon, as I came out of the log school-house, I saw before me hundreds of men with guns in their hands, and coming down the gulch was Slade bareheaded and clothed in buckskin. On either side men held him by his arms as they walked toward a rough scaffold under which was a large box. Upon this he mounted, and his arms were bound to his body above his elbows; up and down he moved his hands as he pleaded, 'For God's sake, let me see my dear, beloved wife!' Twice I heard him utter the same words, then the square looking man with a broad black hat, standing beside him, kicked the box from under his feet. At this appalling sight, in ehildish way, I eovered my eyes with my hands.

"When the crowds had dispersed I started home; on the way I looked into a small room and there, alone, sat Mrs. Slade weeping over the dead body of her husband. I did not know the woman, but felt sorry for her and tiptoed into the room to tell her so; the scene was so terrible I eould not speak, so I left the room as quietly as I had entered, but when outside the door I ran as fast as I could to my home.

"A few doors from my father's house a new building was being erected for a drug store. One evening as I was passing the rear of this building, I looked in, and there hung five men from the rafters. Two of the men I recognized; one was Jaek Gallagher, a

tall, dark man whom I had often seen talking around the camp-fires. Club-foot George was the other; he had often spoken to me when I was playing around the gulch, and I thought his voice pleasant and his manners gentle. It seems as if it were only a short time after the above dreadful sight when, as I opened the back door of our cabin one frosty morning, I was horrified to see a scaffold before me and a crowd of men around it; high above the other men and underneath the scaffold stood a young man with a rope around his neck. He shook hands with several of the men, then he pulled a black cap over his face. When I saw him doing this I turned into the house, but as I closed the door I heard the creaking of the scaffold as the soul of the man had been launched into eternity."

## THE MONTANA OF TO-DAY.

The glory of the old-time mining camps is mostly gone. They are still there, the gulches are still being worked, but the scepter has departed from Judah, and a new civilization has sprung up. Mining towns — of a different sort — have increased, and with them mercantile and agricultural interests have expanded.

Pioneer, Diamond City, Bannack, and Virginia City are worth visiting to-day to see the mighty things that have been done and which are evidenced on every hand. But the big mining camps are found elsewhere.

The railways have revolutionized the region. Instead of towns composed of log huts and tents, there are now found cities with elegant residences, fireproof business blocks, public libraries, fine churches and school buildings, electric lighted streets and homes, and all the addenda of any modern eastern city.

Other things have changed. Society is as refined as elsewhere, men and women are as well and as stylishly garbed, mining is carried on more scientifically and on a gigantic scale never dreamed of in the 60's, and educational institutions have sprung up at many points.

The new Montana, while now being the greatest producer of precious metals in the country, is much more than this, and its tremendous resources have scarcely begun to be developed.

While this is true, mining is yet the hub around which all else largely revolves, and it will so continue to be, at least for years to come.

*A miner's home at Alhambra.*

*Pacific Express climbing the Rockies.*

*"North Coast Limited" in Rocky cañon, Mont.*

*"Lake Superior Limited."*

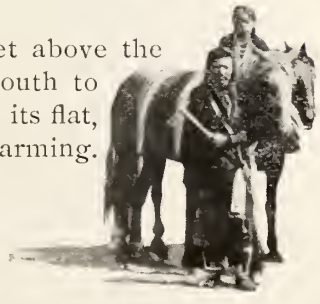
*Twin City Express along Clark fork.*

STORYLAND is what the Indians called it — that wide, wild region that formerly stretched west from the Mississippi on and on into the unknown, and is now traversed by the Northern Pacific main line. The name fitted it. If voices could be given to that once vast solitude, what strange, wondrous tales could be unfolded. Every hill, stream, rock, mountain, valley, and butte could tell a story of adventure.

Now it would be of the old trappers in the fur days; now of savage Indian orgies; again of a band of prospectors or explorers; then of the days of early settlement, followed by tales of camp and fort and Indian vs. white warfare. Tales of great buffalo hunts and feasts, of antelope, deer and elk stalking, of beaver trappings, of long trailings after mountain sheep and goats, of capturing wild horses. A region full of exciting and picturesque adventure has been this storyland of the Indian, the wonderland of the white man.

Stretching west from the Minnesota Parkland lies a country strangely varied in altitude, climate, scenery, and use. Now its ancient, wild grandeur is largely departed. The vast herds that once roamed it are gone; the savage hordes that hunted those wild droves are relegated to metes and bounds. A new generation has gone in and possesses the land, and civilization succeeds barbarism.

The Red River of the North, about one thousand feet above the ocean's level, has fashioned out a valley, running from south to north, hundreds of miles long and leagues wide, that, with its flat, black, rich lands, almost places a premium upon lazy farming.



*Hauling grain on a Red river valley farm.*

*In the Coteau country, N. D.*

*Cowboys in the Pyramid Park country.*

*A glimpse of the Pyramid Park (Bad Lands) country.*

*Eaton's ranch, near Medora, N. D.*

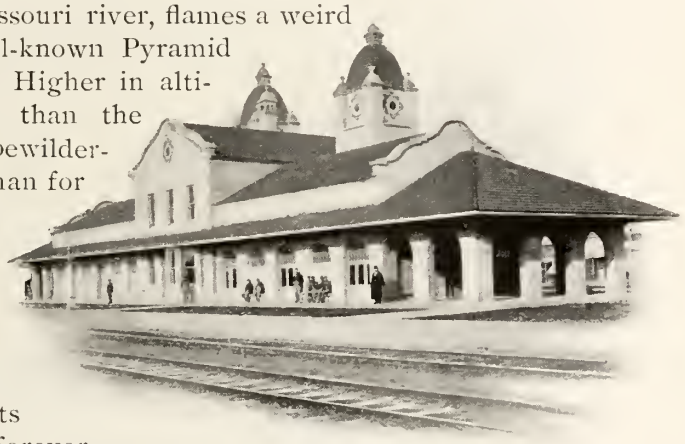
*Main street, Bismarck, N. D.*

*North Dakota Views.*

It is hard to calculate how many loaves of bread are eaten yearly that had their inception in the rich soil of this valley.

Beyond, and from 600 to 800 feet higher, rises the rolling Coteau country of North Dakota, a paradise for flocks and herds.

Still farther on, across the Missouri river, flames a weird land of unique splendor, the well-known Pyramid Park, or the Bad Lands country. Higher in altitude by from 700 to 1,000 feet than the Coteaux, this region of scenic bewilderment appeals also to the herdsman for its unequaled pasturage.



*Northern Pacific Railway station, Bismarck, N. D.*

Painted like an Indian in all his finery; with sculptures that would have excited the envy of Angelo; an almost perfect representation of petrified rock waves whereon the colors of its own gorgeous sunsets have been forever caught and held, it extorts the wonder and admiration of the sightseer.

And now we reach that rolling, sunkissed stream, called by the red man the Elk; by the French voyageur, Roche Jaune; by the American, Yellowstone. For 341 miles its winding valley, gradually rising from 2,100 to 4,500 feet in elevation, is followed by the Northern Pacific rails. Its broad bottom lands, backed on either side by vaster ranges for flocks and herds, show conclusively that here is the mutton and beef growing region of the country; its sharp rock spires and castellated cliffs form a moving panorama emphasized by the rutilant stream laving their taluses.

The Shining Mountains of Carver, the Rockies of our own day, in three serried, parallel lines stand athwart the course. American engineering has mastered them; and over them once, twice, thrice, at low elevations of 5,565, 5,550, and 3,948 feet, the steel rails climb and duck and again stretch westward down the valley of Clark Fork river, a stream not quite as large as the Yellowstone, but much finer in scenic attraction, lower in elevation, and flowing in an opposite direction.

The Clark Fork and its mountain walls are succeeded by Lake Pend d'Oreille deep down in a mountain basin, 2,100 feet above the ocean. These mountains are the western flanks of the Rockies, and beyond them spreads out the great plain of the Spokane, Palouse, Big Bend, and the Columbia, now the great granary of the far Northwest.

The valley of another river, the Yakima — 400 to 1,500 feet above sea level — follows. Here irrigation is king, and a former idle, worthless desert is being transformed

*A Flathead Indian family.*

into a paradise and a sanitarium for those having weak lungs.

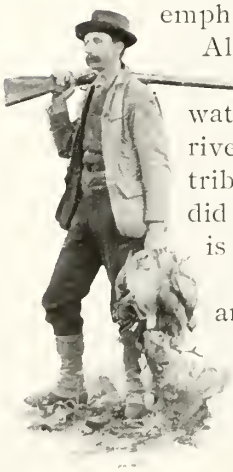
Another mountain range looms ahead. Far different is it from the Rockies, not so bare, rock-bound, and ragged. The Cascades are gorgeously decked in green, and deep, yawning gulches forested from bottom to top are characteristic of the topography.

*Wash-day at the ranch.*

The rails cross the mountains through the Stampede tunnel, 2,849 feet in elevation and nearly two miles in length, and then gently wind down a narrow cañon that for its size and character will compare with

*A herd of Montana sheep.*

anything I have ever seen. It is the Green river cañon, of winding vistas; dashes of impetuous rapids alternating with deep, quiet, cool, trout-hiding pools; wild, vine-covered and berry-flecked mountain sides, with here and there a rocky wall or towering crag to add emphasis.



*A bunch of Montana grouse.*

Along the remoter northern base of Mount Rainier the rails swing to Seattle and Tacoma, thence on through a low, level, and well watered succession of prairies and valleys to the mighty Columbia river at Kalama, and then along the banks of that stream and its tributary — the deep, peaceful Willamette — to Portland, the splendid metropolis of Oregon, and the 2,000-mile trip through Storyland is done.

But there is much besides this. There are ranches and farms and people and towns and cities.

*A cattle herd well bunched, in eastern Montana.*

In the Red river valley, Fargo, Grand Forks, Crookston, and Grafton, in North Dakota, and Winnipeg in Manitoba across the border, invite the cosmopolite; beyond, Valley City, Jamestown, Bismarck, Mandan, and Dickinson will show western enterprise and some diversity of life.

The Yellowstone and Gallatin valley towns have not grown to metropolitanism yet, but they are "inching" along, and the railway business shows it. Glendive, Miles City, Forsyth, Billings, Big Timber, Livingston, and Bozeman are each stripped for the race, and are known, in Western parlance, as "hustlers."

Beyond Bozeman the Northern Pacific forks; one fork crosses the mountains by following the Missouri river northward and then cutting straight across to Helena, the capital of the State, and then climbing the hills; the other line swings westward along the Jefferson river, when, fold rising above fold, it circles among the granite domes and crags, passes through Butte, Anaconda, and Deer Lodge to Garrison, where the divorce granted at Logan is annulled and the two lines again become "one and inseparable."

Missoula, at the mouth both of the Hellgate cañon and Bitter-root valley, is a beautiful and rapidly growing university city.

Spokane is an empress. The wealth of both the hills and the plains is hers, and through her vitals courses a rushing river whose strength is transmuted into electrical energy whose throbs and light are felt and seen throughout her borders. From her, through many radiating lines of railway, circulates a strong, healthy quality of commercial blood. South of Spokane lies the Clearwater and Walla Walla country, with Lewiston, Walla Walla, and Pendleton as the important centers.

In the Yakima country, North Yakima and Ellensburg have a consciousness of reserve strength for the future, and the towns of the coast are like raisins in a pudding — many and plump.

*Montana and Idaho Views.*

1. *University of Montana, Missoula, Mont.*
2. *On Middle Gallatin river, near Bozeman, Mont.*
3. *The Bridger range, near Bozeman, Mont.*
4. *Cabinet gorge, on Clark Fork river.*
5. *Along the Hellgate river, near Missoula, Mont.*
6. *A Gallatin valley ranch crop.*
7. *Just east of Logan, Mont., on N. P. R.*
8. *On Butte Air Line (N. P. R.)*
9. *On the Bitter Root river, showing Blodgett's cañon in distance.*
10. *Lake Pend d'Oreille, Idaho.*
11. *Rock Spire, on Butte Air Line (N. P. R.)*

*Flathead squaw and papoose*

Growing, progressing, and enriching—this is the condition of all of these coming cities. Take this 2,000-mile ride and see them.

In making this flight, I wish to call attention to two spots, like yet unlike in character. The tourist will be glad to stop a day or a week at them, the weary invalid a month.

There are Spas galore in this broad land, but the Northern Pacific

*Spokane Falls, Spokane, Wash.*

is fortunate in having on its main line—one in Montana, the other in Washington—two that are equal to any in the country.

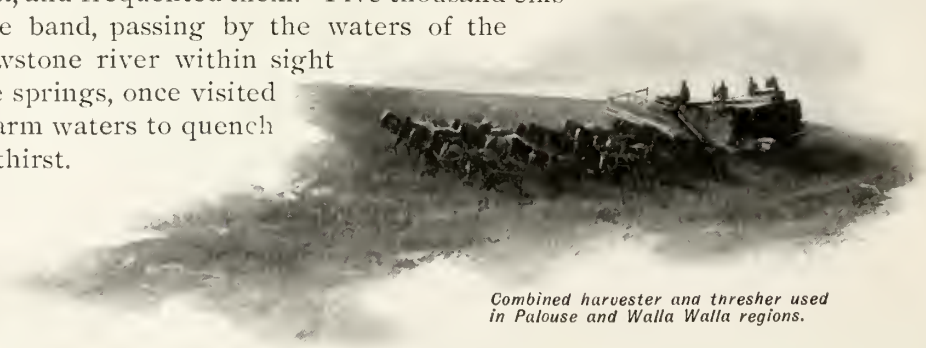
*High school building, Spokane.*

## HUNTER'S HOT SPRINGS.

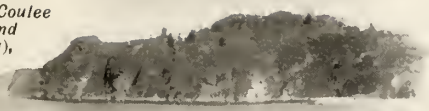
The closing years of the Civil War found Dr. A. J. Hunter, of Missouri, financially ruined. The Montana gold-fields were then attracting attention, and Doctor Hunter and family, in 1864, started for them by way of the prairie schooner limited route. After divers adventures they reached the beautiful valley of the Upper Yellowstone, and while out hunting the doctor ran across a band of several hundred Indians camped at a group of hot springs. These springs were much frequented by the many tribes of red men in the region, who well understood their healing properties.

Eventually the doctor, a physician and knowing the value of the waters, became possessed of the springs, gave them the name they now bear, established a rude sanitarium, and lived there through many trying frontier experiences.

These springs were popular, not only among Indians—as they are to-day among the whites—but the animal kingdom appreciated them as well, and frequented them. Five thousand elks in one band, passing by the waters of the Yellowstone river within sight of the springs, once visited the warm waters to quench their thirst.



*Combined harvester and thresher used in Palouse and Walla Walla regions.*



A horse round-up in the Grand Coulee (Big Bend country), Wash.

These springs are about twenty miles east of Livingston, 1,000 miles from St. Paul, and two miles from Springdale, on the Northern Pacific, and beautifully situated among the foothills of the Crazy mountains, an outlier of the Rockies, with the Yellowstone river in plain view. They are now owned by James A. Murray, a well-known mine owner of Butte — from which point and Helena they are quickly reached, and at slight expense — and are managed by McCormick and Perry. Within the last two or

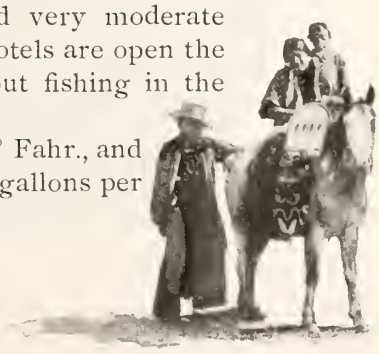
Main street, Lewiston, Idaho.

A good place for trout on Green river.

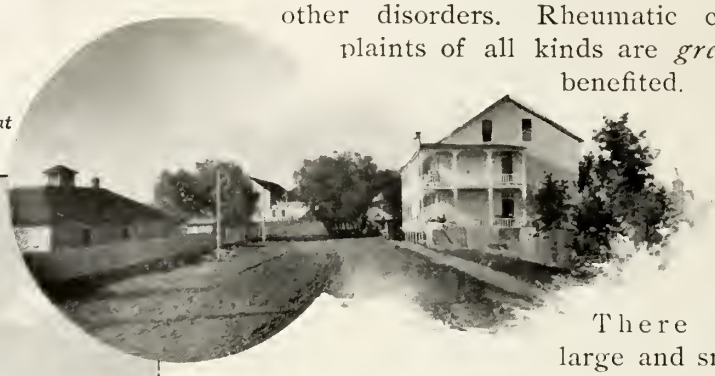
three years, the accommodations have been greatly improved. The traveler will not find here the luxurious appointments of Saratoga, or the Hot Springs of Arkansas, but he will find water that is better, food most wholesome, the utmost cleanliness, satisfactory modern conveniences, courtesy and attention, attendants and a resident physician, a glorious climate — 4,000 feet above sea level — and very moderate prices. The Springs hotels are open the year round, and during the season there is fine trout fishing in the Yellowstone river and tributary creeks.

A bit of Northern Pacific Railway track along Green river.

The water ranges in temperature from 148° to 168° Fahr., and is in three groups, having an aggregate flow of 2,500 gallons per



minute. It is of the highest organic purity and particularly efficacious in diseases of the digestive organs, and in nervous, skin, and various other disorders. Rheumatic complaints of all kinds are *greatly* benefited.



*Hotels at Hunter's Hot Springs.*

There are large and small plunge baths and bathing tubs, with dressing rooms *en suite*, etc., all under cover and connected.

One of the interesting features in summer is the large and fine garden that supplies fresh vegetables daily.

Tourists visiting Montana will enjoy a few days at this resort, that is rather on the rustic order, and with an open, charming, southern outlook, and the water of which is said to be superior to that of the Hot Springs of Arkansas. The "North Coast Limited," westbound, and the Pacific Express, both eastbound and westbound, stop at Springdale, where trains are met by a carriage from the Springs.

*Fishing on the Yellowstone at Hunter's Hot Springs.*

*Hunter's Hot Springs.*

*Park opposite hotels, Hunter's Hot Springs.*

GREEN RIVER HOT SPRINGS.

Over on the North Pacific slope, in the heart of the Cascades, the second group of springs burst from the ground. Here, too, the Indian was the pioneer. Here the tribes gathered from the slopes about Tah-hó-ma or Tak-o-man (Mount Rainier), Pah-to (Mount Adams),

*A suite at Green River Hot Sp 'ngs hotel.*

*Green River Hot Springs hotel and Hot Springs mountain.*

Lah-me-lát-cla (Mount St. Helens), and from Whulge (Puget sound), and laying aside any little differences, enjoyed the hot waters and eradicated disease.

In time the white man dispossessed the red man, and for many years these waters, as they come tumbling down the mountain side, have been piped across the Green river and made to minister both to the ills and pleasure of the usurper.

*Dining room*

*Billiard room.*

The site of these springs is a picturesque one on the banks of the Green, a fine trouting stream, with the Cascades towering high above. They are about 1,600 feet above sea level, sixty miles east from both Seattle and Tacoma, and about 200 miles east from Portland. The climate is warm, moist and pleasant at all seasons of the year.

From near the banks of Green river and the base of the Hot

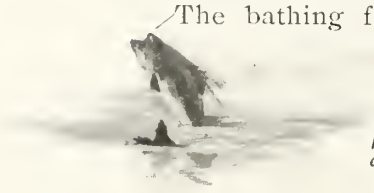
*Mount Hood from Portland.*

Springs mountain, the hot mineral water breaks its way to the surface on its mission of mercy to humanity. In all there are twenty-seven springs furnishing a volume of water so great that more than 200,000 gallons go to waste daily. The average temperature is 132 degrees Fahr. The water is alkaline in character, containing no less than twenty-six grains of mineral matter to the gallon. It is also strongly impregnated with free carbonic acid gas, and to its presence is due the fact that the hot water can be drank freely without the nausea that frequently accompanies the ingestion of artificially heated waters.

Within two years a new and excellent hotel has been erected at this point and no place of the sort, east or west, now offers to the tourist, traveler, or invalid a more delightful resting spot. The hotel is a gem architecturally, is modern in every way, heated by steam, lighted by electricity, etc., faces south and has roomy verandas.

The cuisine is beyond criticism, prices reasonable, rooms sunny and homelike, and Dr. J. S. Kloeber, a physician himself, in charge of the springs, makes it a point to *make* one feel at home and enjoy one's self. Then there is a bowling alley, golf links, tennis courts, billiard and pool tables, and a herd of Jersey cows to supply pure cream and milk.

The bathing facilities are, as might be expected,



*Hooked at last.*

strictly first class and under the charge of skilled attendants. Russian and Turkish baths, massage, etc., can all be found here.

For those who enjoy climbing, the mountains afford abundant opportunity. Trails lead up the Hot Springs mountain so that the sources of the springs can be visited if desired.

Those who journey to the North Pacific coast should make a mental note of Green River Hot Springs and plan to spend a day or two there, or run out from Tacoma or Seattle (round-trip rate is very low) and spend a Sunday. A surprise awaits the easterner who is wise enough to act upon this suggestion.

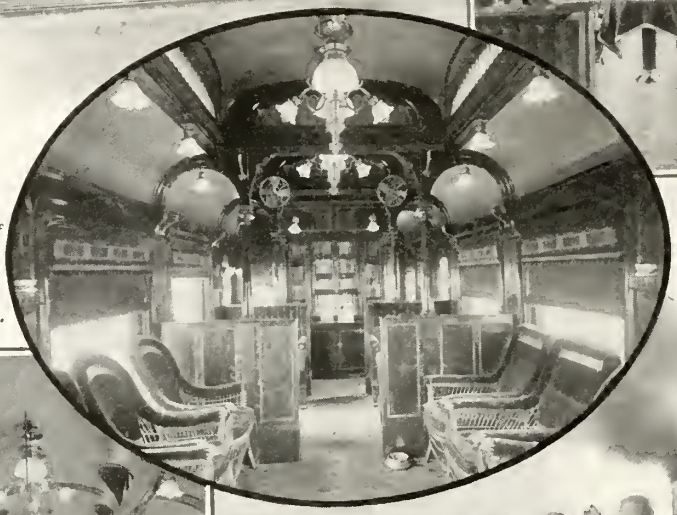
All through trains on the Northern Pacific stop at this point.

*Mount St. Helens from Portland.*

*Standard dining car, N. P. R.*

*Class S-3 road engine.*

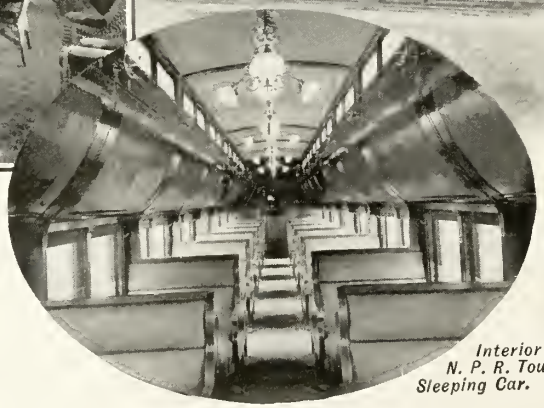
*Interior of observation car on "North Coast Limited," N. P. R.*
*Looking toward rear.*



*Interior of observation car showing library, "North Coast Limited," N. P. R.*

*Interior of parlor car on "Lake Superior Limited."*
*Run between St. Paul and Duluth on N. P. R. "Short Line."*

*Class Y-3 modern compound mountain-helper-engine*
*Diam. of boiler, 7 ft.; weight of engine and tender, 322,000 lbs.*



*Interior of N. P. R. Tourist Sleeping Car.*

THE year 1876 may, I presume, be truthfully called the high watermark of our Indian warfare. The Nez Percé War of 1877 was vigorous and exciting, but only one tribe was engaged in it and the casualties were small as compared with those in 1876.

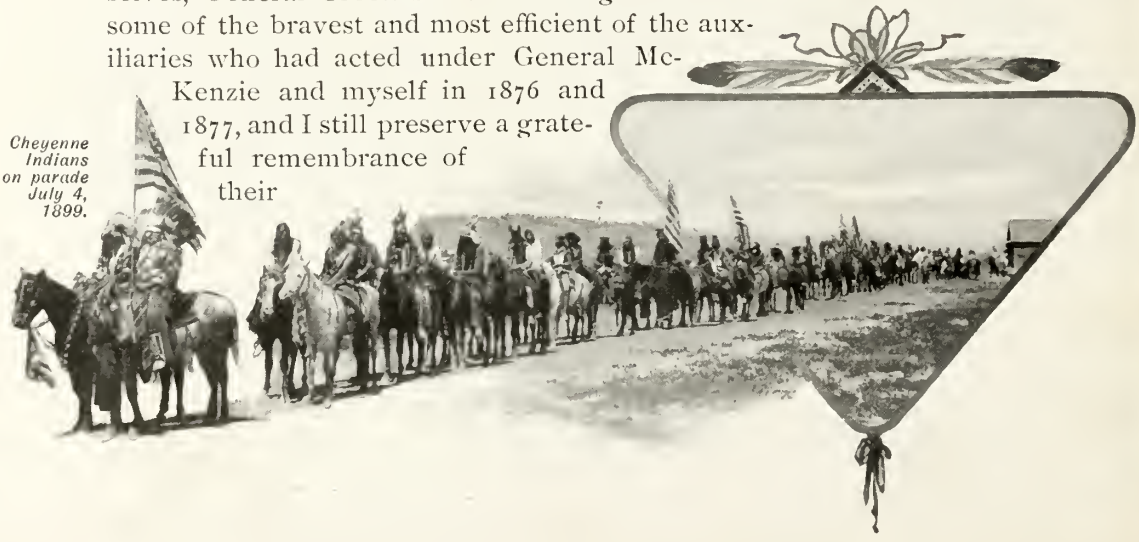
The war of 1876 was a bloody one, covering a wide range of territory; and while known as the Sioux War from the great preponderance of those bands of Indians grouped under the general name of Sioux, properly Dakotah, taking part in it, there were other tribes engaged therein. The most prominent of these was the Cheyenne tribe. These, in the early days, had become segregated into two bands known as the Northern and Southern Cheyennes, and as such they are known to-day. The former ranged on the plains north of the Platte river in the Sioux country; the latter roamed the country watered by the Arkansas river and occupied also by the Comanches and Kiowas. About the time the Cheyennes separated, the Arapahoes also divided into Northern and Southern bands, each allying itself more or less closely with the corresponding band of Cheyennes, but there appears to have been no close union between the Northern Cheyennes and Arapahoes with the Sioux, although for years they occupied the same reservation.

The Cheyennes in general appear to have been restless and predatory and were in pretty constant conflict with the whites. When there-

*Panoramic view of Lame Deer agency.*

force, in 1876, the Sioux War began, the prospect was too alluring for the Cheyennes to hold aloof, and both bands took part in it, particularly the Northern contingent. Crook fought them on the Rosebud; Merritt, in his fight on the War Bonnet, drove back a large war party of Southern Cheyennes who were trying to join their brethren in Crazy Horse's camp; they were among those who annihilated Custer on the Little Big Horn, and they were fought by McKenzie and Miles during the fall and winter of 1876–77. And strangely enough, too, some of them were allies of Crook and McKenzie in 1876–77, and after the terrible punishment given Dull Knife's band in November, 1876, and his subsequent cold reception by Crazy Horse, the Cheyennes quickly changed heart, surrendered, and were keen to go out and, with the whites, wreak vengeance on Crazy Horse and his following. Their firm determination to do this was the real reason for the peaceful surrender of the latter in 1877.

Early in 1877 the war was practically ended and many of the Cheyennes, upon their own request, were removed from the old Sioux reservation to Indian Territory where their Southern brethren were. This arrangement proved so unsatisfactory that in the summer of 1878 some 300 of them, including eighty-nine warriors, under Dull Knife and Little Wolf, broke away and endeavored to reach their old hunting grounds, leaving a bloody trail behind them. They were finally corralled, many killed and some of them returned to Indian Territory. The Cheyennes felt that they had been wronged and broke away in sheer desperation. Regarding this outbreak and the Indians themselves, General Crook said: "Among these * * * were some of the bravest and most efficient of the auxiliaries who had acted under General McKenzie and myself in 1876 and 1877, and I still preserve a grateful remembrance of their

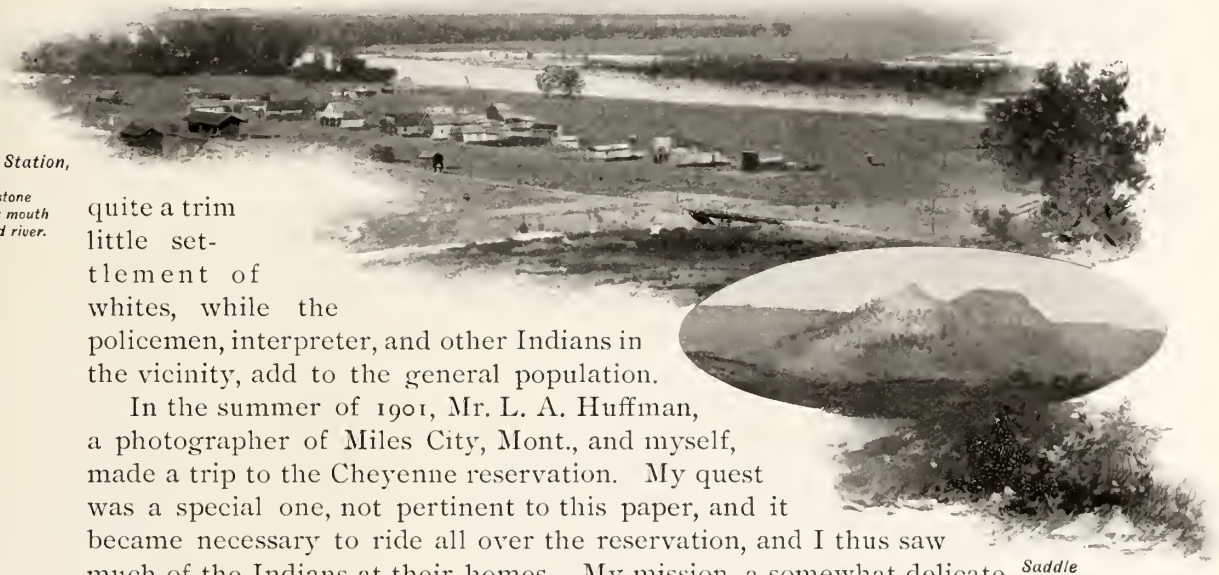


*Cheyenne Indians on parade July 4, 1899.*

distinguished services, which the Government seems to have forgotten," a statement apt to somewhat prejudice one in their favor.

Events so shaped themselves that in 1884 the Tongue river reservation, as it is officially termed, was established adjoining the Crow reservation in Montana. It is popularly known as the Cheyenne reservation. Five hundred and eighty square miles were first set aside and subsequently 600 square miles were added, the total now being 1,180 square miles. The Agency is located on Lame Deer creek just below the Lame Deer battle-ground, where, in May, 1877, General Miles whipped Lame Deer's band, the chief himself being killed, and buried in a natural rock sepulchre or cave near by. Miles himself escaped death by a hair's breadth.

Besides the agent and clerk and the soldiers, there are a schoolteacher, physician, blacksmith, traders' posts, boarding house, etc., making quite a trim little settlement of whites, while the policemen, interpreter, and other Indians in the vicinity, add to the general population.



*Rosebud Station, N. P. R. On Yellowstone river, near mouth of Rosebud river.*

*Saddle Butte, in the Rosebud valley.*

In the summer of 1901, Mr. L. A. Huffman, a photographer of Miles City, Mont., and myself, made a trip to the Cheyenne reservation. My quest was a special one, not pertinent to this paper, and it became necessary to ride all over the reservation, and I thus saw much of the Indians at their homes. My mission, a somewhat delicate one, was made easy by a letter of introduction from Dr. George Bird Grinnell, of New York, and this was warmly seconded in an earnest talk by Major Clifford, the agent.

The Indians received us hospitably, were patient and perfectly frank, having not the least apparent suspicion of my motives. I formed a high opinion of their general character, and believe that, properly handled and encouraged, they will become as proficient, comparatively, in the arts of peace as they formerly were valiant in war.

Leaving Miles City our route led through Fort Keogh, across the Divide—in places fearfully gullied and cut up—between the Tongue

and Rosebud rivers, thence up the valley of the latter stream. It will be noted at once that we were on historic ground. It was the heart of the region over which Custer, Crook, Terry, Gibbon, and Miles had marched, countermarched, and fought Sitting Bull, Crazy Horse, Gall, Dull Knife, and Lame Deer in 1876–77. Indeed, we were actually following Custer's trail up the Rosebud.

It is a most picturesque and charming landscape, and recalled strongly to mind, in some of its characteristics, my days of roughing it in the country drained by the Green, Grand, and Colorado rivers.

The Tongue river is a large, swiftly flowing, wide, sweeping river, with a goodly amount of bottom lands bordering it, but I was greatly disappointed in the Rosebud. It is an insignificant stream, narrow, sluggish, roily, and unpicturesque. The valley is not as wide as that of the Tongue, but the borderings of it and its general presentment infinitely surpass the latter. Erosion has done some fine carving, and the sculptural effects in the way of bald buttes, rounded hills, solitary, detached and unique stone columns, palisades and cliffs, are bold and edifying. At the Great Bend of the Rosebud the view is particularly strong. The river and valley swing, in wide and dignified sweep, from northeast to north, the valley widens out affording greater contrasts, the buttes and hills stand like giant monuments, and, to enliven the scene, there is a vivid display of color. The tints are mainly pinks and reds, with enough black — coal streaks — and yellow to heighten the effect.

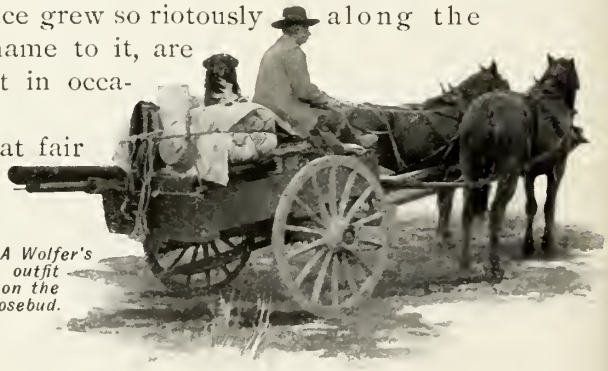
*Fortress rocks.*

In the days of '76 when Crook and Custer and Reno rode through there, it was a great game country, the home of the Indian whose trails wound over the boundless, unfenced prairie. How different now! Cattle and sheep in place of elk and buffalo; ranch homes in lieu of tepees; roads have almost obliterated the old trails, and, what almost breaks an old-timer's heart, wire fences extend in all directions.

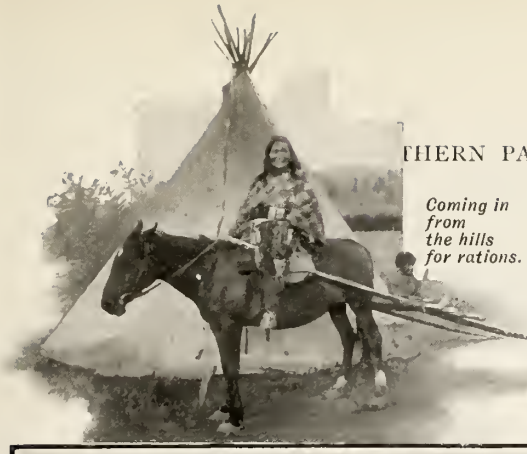
But the buttes and hills are the same, and one who understands can reconstruct, mentally, the picture as it presented itself to those troopers who formerly saw it as, alas! it will never again be seen.

The wild rose bushes which once grew so riotously along the banks of the stream and gave name to it, are scarcely to be found now except in occasional spots.

Huffman and I drove along at fair speed, stopping here and there to photograph, and obtaining meals



*A Wolfer's outfit on the Rosebud.*



*Coming in from the hills for rations.*

and lodging at road ranches. We also carried a camp outfit, which came into convenient use several times.

Upon reaching the north line of the reservation we came upon an Indian

*A pony herd.*

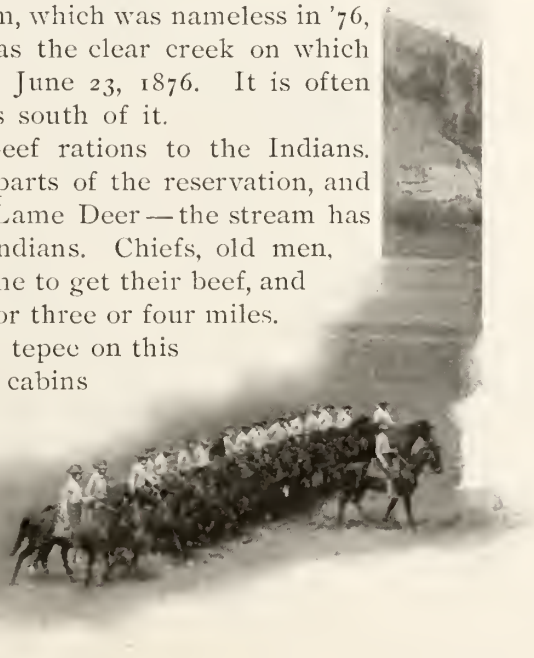
pony herd grazing over the wide plain. There were several hundred ponies, young and old, and they presented a pretty sight, there being so many white and mottled ones among them. This herd had been purchased from the Indians by whites and were bound for eastern markets. The sale of their surplus ponies is about the only source of revenue the Cheyennes have.

*Just before the grub dance.*

Late one afternoon we reached the agency, located about four miles above the mouth of the creek. This stream, which was nameless in '76, is noted in the annals of Custer's march as the clear creek on which the 7th Cavalry camped on the night of June 23, 1876. It is often confounded with the Muddy, a few miles south of it.

Every two weeks the agent issues beef rations to the Indians. Then the red brethren gather from all parts of the reservation, and the narrow, beautiful little valley of the Lame Deer — the stream has lost its clearness now — is filled with Indians. Chiefs, old men, young bucks, squaws and papooses, all come to get their beef, and the village is strung out along the stream for three or four miles.

The log cabin is rapidly replacing the tepee on this reservation, and many Indians have built cabins near the agency, which they occupy at issue time. Many, also, leave



*Troop of cavalry at Lame Deer agency.*

*An Indian camp on the Lame Deer.*

*A Cheyenne dance house and council room.*
*Little used now.*

*Tongue river (Lame Deer) agency.*
*Star shows school-house.*

*Bucks pow-wowing about pony races.*

*Beef drying.*

their tepee lodge poles standing here so that when they arrive they have but to cast around them the cloth covering, when, presto! the skeleton becomes a domicile and a temporary home.

We reached Lame Deer a day or two after such an issue. The Indians and the glory had largely departed, but there were many tepees yet to be seen with groups of Indians about. On scaffolds the meat of the slaughtered beeves was hanging and drying, and as rapidly as it cured the squaws folded the tents and, like the Arab, silently stole away. Indeed, the very next morning lovely Auburn of the plain was gone, for upon gazing from my bedroom window down the valley, the eye saw only another "deserted village," with no Goldsmith to immortalize it.

We were escorted to the agent's office by a brace or two of youthful cavaliers, passing on the way a large group of mounted bucks powwowing. For hours they remained there, almost immovable, and finally, just at dusk, the long powwow resulted in a series of pony races.

We found Major Clifford, by whom we were received cordially, in his office and surrounded by his Indian police, interpreter, and others, engaged in weighty consideration of reservation matters.

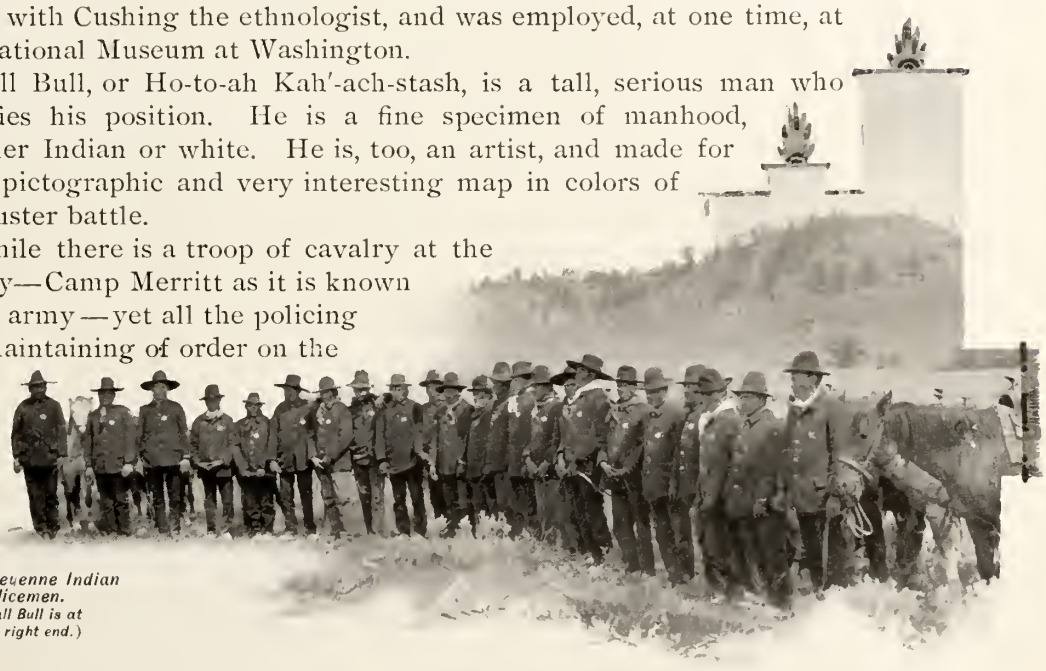
I was much impressed with the dignified, senatorial demeanor of the gathering. The major sat at his desk, with Squinteye, his Cheyenne interpreter, and Tall Bull, the captain of Indian police, in front of him, and the others ranged in chairs about the room, the police in blue uniforms and with silver badges on their breasts.

I became well acquainted with these men and am glad to feel that they are my friends.

Squinteye, or better, Little Eye, in Cheyenne, Itch-ke Match-in', subsequently did a good deal of interpreting for me, and did it well. He lived for a time with the Southern Cheyennes, has traveled, he told me, in New Mexico and Arizona among the Navajo and Pueblo Indians, with Cushing the ethnologist, and was employed, at one time, at the National Museum at Washington.

Tall Bull, or Ho-to-ah Kah'-ach-stash, is a tall, serious man who dignifies his position. He is a fine specimen of manhood, whether Indian or white. He is, too, an artist, and made for me a pictographic and very interesting map in colors of the Custer battle.

While there is a troop of cavalry at the agency—Camp Merritt as it is known to the army—yet all the policing and maintaining of order on the

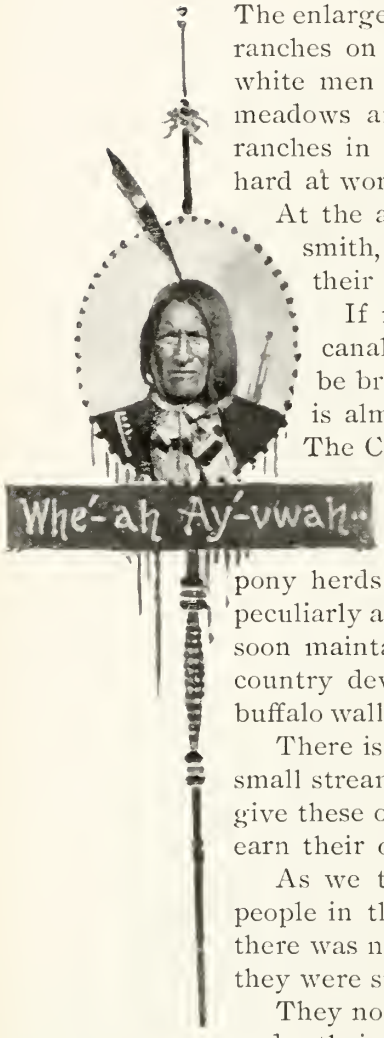


*Cheyenne Indian policemen. (Tall Bull is at the right end.)*

reservation is done by this corps of Indian policemen. Wherever we went we found these fellows, rather odd looking in their broad brimmed, heavy, black felt hats, faithfully patrolling their districts.

One day while we were there, three young bucks were brought in charged with annoying a young Indian woman. Upon the woman's evidence one of them was placed in jail. In some manner he soon escaped, but within twenty-four hours a policeman, sent after him, had him back behind the bolts.

The reservation is comparatively worthless agriculturally, but from either a scenic or a stockman's standpoint it is all that one could ask. The enlargement of the reservation secured to the Indians several good ranches on the Rosebud and Tongue rivers. These were owned by white men and were equipped with irrigation canals, buildings, fine meadows and alfalfa fields. The Indians have taken hold of these ranches in a commendable way, and it was encouraging to see them hard at work cutting and stacking alfalfa




At the agency, several of them, under the direction of the blacksmith, were repairing mowing machines and making hayracks for their wagons.

If money were forthcoming for a good system of irrigating canals on a larger scale, considerable areas of land might yet be brought under cultivation. But for stockraising the country is almost a paradise, and to this purpose it should be devoted. The Cheyennes, however, have no money, are entirely dependent on the Government for rations, have few cattle, no sheep, and not a large number of horses.

They are natural horsemen and if, in addition to their pony herds they were supplied with cattle, for which the region is peculiarly adapted, all conditions would be well met, and the tribe would soon maintain themselves. There are large areas of grassy plateau country devoid of timber, and the old game trails and thousands of buffalo wallows seen, show what a wild pasture ground it formerly was.

There is a good supply of timber and coal, and springs, ponds, and small streams are fairly abundant. Let Congress do the fair thing and give these old fighters of the plains a chance to redeem themselves and earn their own livelihood in a manner at once natural and congenial.

As we traversed the reservation and saw and talked with these people in their own habitations, it was hard to persuade myself that there was not some great flaw in our former treatment of them, that they were such Ishmaelites as they appear once to have been.

They now seem amenable to restraint, are slowly working out from under their old superstitions, appear strong and healthy, and are noted, both men and women, far and wide, for their *sobriety and chastity*.

The evening of our arrival, as we were standing in Mr. Walter's store, Huffman touched me on the shoulder and remarked quietly:

"Here comes American Horse." Slowly down the store with stately, martial tread came a tall, straight Indian wrapped in a dirty white muslin blanket, a kind much used by the Cheyennes in summer. He looked liked a chief and general. His long straight hair was black as a raven's wing, and intelligence, repose, honesty, and character in general were stamped all over him. When I was introduced to him afterward, he met me in the open, dignified way that one would naturally expect.

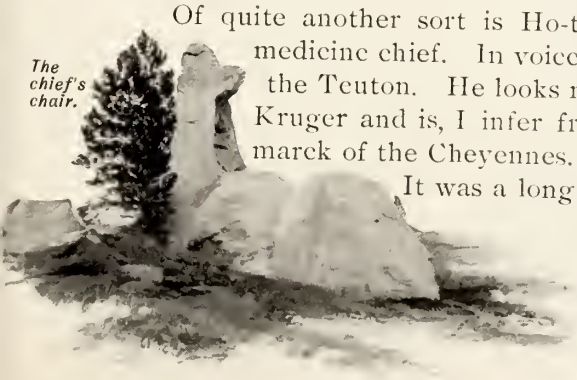
*American Horse and family.*

*American Horse's camp and pony herd, Lame Deer reservation.*

Twice I visited him at his home, some ten miles away, in a beautiful vale where he and his two wives and children live. There, near a fine spring, he looks after his drove of horses, cultivates a patch of ground, and lives as the old patriarchs did. There, too, you see him at his best.

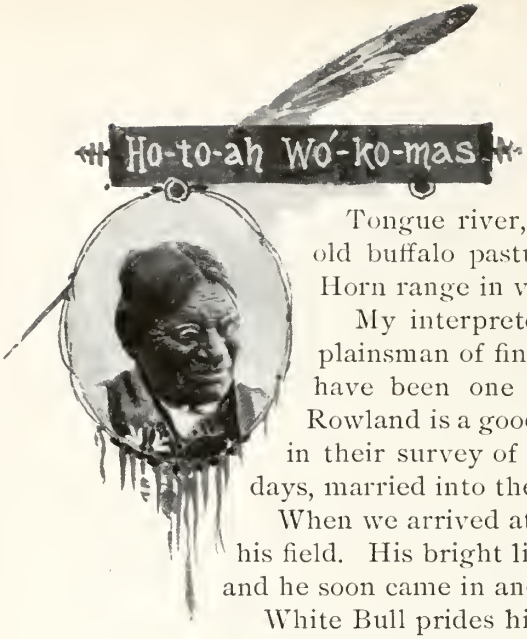
It was intensely interesting to me to watch the old chief, as he leaned back against a pole of a scaffold roofed and shaded by evergreen boughs, and recounted to me his tale of a time long ago, which I sought. After a smoke in his pipe of red pipestone—which I afterward obtained—in which all his family joined, with infinite patience and impressive gesture he told his story, his eye lighting up with the light of an ancient fire. An Indian grandee is Whe'-ah Ay'-vwah.

Of quite another sort is Ho-to-ah Wo'-ko-mas, or White Bull, a medicine chief. In voice and physique, he savors strongly of the Teuton. He looks not unlike the pictures of Oom Paul Kruger and is, I infer from what I saw and heard, the Bismarck of the Cheyennes.



*The chief's chair.*

It was a long drive to White Bull's cabin over on




Tongue river, but across a beautiful and rolling country, an old buffalo pasture, with the peaks of the snow-mantled Big Horn range in view.

My interpreter on this occasion was Wm. Rowland, an old plainsman of fine military bearing, who appeared as if he might have been one of St. George Cooke's or Kearny's dragoons. Rowland is a good interpreter, was with Stansbury and Gunnison in their survey of Great Salt Lake in 1849, and he had, in early days, married into the Cheyenne tribe.

When we arrived at Ho-to-ah Wo'-ko-mas' cabin he was at work in his field. His bright little daughter chased cheerfully away after him, and he soon came in and greeted us cordially.

White Bull prides himself upon his freedom from superstition, and believes not, he says, in the Indian Messiah, ghost dances, etc. He was one of the Cheyenne chiefs at the Custer fight, had a son killed there, and knew Sitting Bull well. He exhibited letters from General Miles and others, and photographs of army officers now long dead and gone, which he carefully treasured. For some of these men the old chief has, beyond doubt, a sincere affection.

We had a long and most interesting "talk," preceded by the usual smoke, and the chief was frankness itself. He is rather seriously inclined, gesticulates much — more than American Horse — and submitted admirably to interruption and interpolation.

The chief's weak eyes compel him to wear old-fashioned goggles, and with these, and clad in leggings and vest of buckskin ornamented with porcupine quills in many colors, he was truly a picturesque figure.

As showing that these people have an appreciation of the smaller amenities of life, I relate an incident that occurred this day.

To find a stopping place for the night it was necessary to drive from White Bull's, some miles down the Tongue river, to St. Labres' Mission School. This school is managed by the Ursuline Sisters of the Catholic Church, and apparently with fair success. The Mother Superior was very kind to us and we appreciated her courtesies. On our way there we passed a young Indian who had stopped to gather some onions at a garden and whose horse had taken French leave of him. Within two or three miles we overtook the pony, caught him, and I held him until the owner came up, which was within a few minutes. As he took the bridle reins, he very

*White Bull being interviewed.*

*Brave Wolf and squaw.*

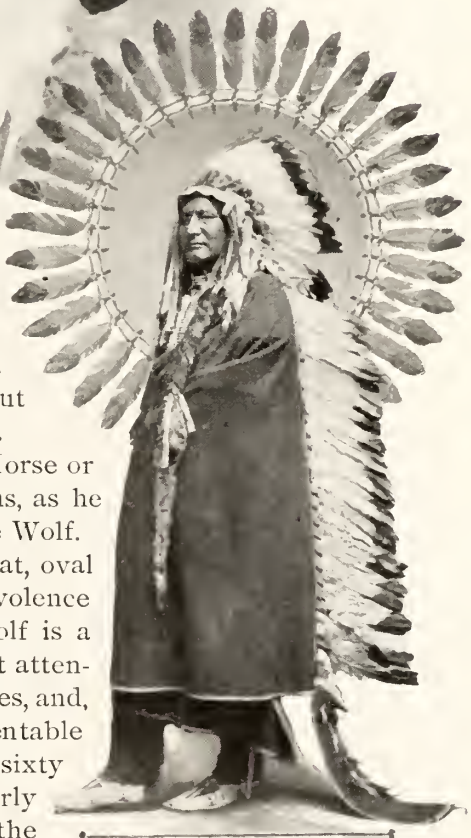
Ho-tnay Oh-káhs

modestly and graciously turned toward me and in his broken way said "Tchank oo."

And then came the Indian's revenge on the pony. Mounting him the Indian dug his heels into the pony's ribs and was off like the wind. One mile, two, three miles, and until a divide cut off the view, he kept him going on the dead run.

Two more chiefs, unlike either American Horse or White Bull, are A-shay-o Nísh-is, or Two Moons, as he is usually called, and Ho-tnay Oh-káhs, or Brave Wolf.

The first is a very large, fleshy man, with a fat, oval face not unlike the moon itself, and with benevolence and good nature stamped all over it. Brave Wolf is a much smaller man, but his fine face would attract attention anywhere. A-shay-o Nísh-is wears spectacles, and, properly togged out, would make a very presentable Methodist bishop, barring the piety. He is now sixty years old, weighs 225 pounds or more, and is nearly six feet and a half in height. The chief says the whites turn his name around. He says: "Cheyennes say A-shay-o Nísh-is — Moon Two! Americans say Two Moons."



A-shay-o Nísh-is

*Moon Two, A Cheyenne chief.*

Of these men some were scouts with Miles against Lame Deer in 1877; White Bull and Brave Wolf were with Miles in 1877 in the Nez Percé campaign; Brave Wolf and Moon Two — to respect the chief's opinion — were with Terry in 1878, against Dull Knife and Little Wolf,

and Moon Two and Brave Wolf were Cheyenne scouts for General Miles in his campaign against Sitting Bull in 1879.

Ex-Congressman John F. Finerty, who, as a correspondent for the Chicago *Times*, accompanied Crook through all the Sioux campaign in 1876, and was with Miles in 1879, writes thus in "War Path and Bivouac," regarding the Indians with Miles:

"The Cheyennes are as proud as Lucifer, and rarely beg. They fight like lions, and are, taken altogether, Indians of the dime-novel type. Some of them are amazingly intelligent, and, strange as it may seem to my readers, are of gentlemanly deportment. Brave Wolf was as graceful as a courtier, and had a face of remarkable refinement. * * * * Little Wolf, the Cheyenne chief, was regarded with respect by all the officers, on account of his honesty and fearlessness. He and Brave Wolf were accounted the two best Indians in the command."

Besides the Cheyennes, Miles had Sioux, Crows, Assiniboines, and Bannacks with him.

Brave Wolf is, I think, all that Finerty claimed for him.

All of these chiefs were allied with Crazy Horse and Sitting Bull in the Sioux War of 1876; now each one has his farm or ranch on the reservation, and there Huffman and I were received by them with warmth, dignity, and hospitality.

I was struck with the bearing of the Cheyenne women and children. There was little or none of that extreme diffidence and hiding so characteristic of Indian women and children. The women were modesty itself and sufficiently retiring, and the children had evidently been taught that they were to be seen rather than heard, but with both there was a certain sort of fearlessness and lack of scariness, in meeting strangers, quite unusual and refreshing to see.

These people, of course, are Indians, not whites, but they are intelligent, brave, proud, sensitive, and, according to their agent, are advancing and improving. Their view-point of many things is not ours, and while Indians they will always remain, I am convinced that our treatment of them is the solution of their good or ill behavior.

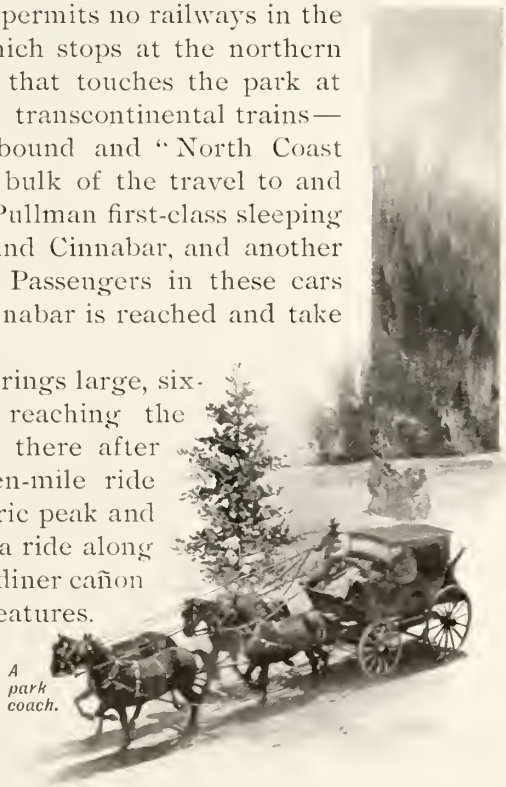
## THE TOUR OF THE PARK.

IN GOING to Yellowstone Park, the main line of the Northern Pacific Railway is diverged from at Livingston, Mont. From Livingston to Cinnabar, fifty-one miles, a branch line leads up Paradise valley and alongside the Yellowstone river, affording a most delightful ride, and one that forms a fitting prelude to what follows.

The Government permits no railways in the park, and this line, which stops at the northern boundary, is the only one that touches the park at any point. On each of the transcontinental trains—the "Pacific Express" westbound and "North Coast Limited" eastbound—that carry the bulk of the travel to and from the park, both east and westbound, a Pullman first-class sleeping car is attached that runs between St. Paul and Cinnabar, and another that runs between Cinnabar and Seattle. Passengers in these cars bound for the park remain in them until Cinnabar is reached and take the cars at Cinnabar when leaving the park.

Between Cinnabar and Mammoth Hot Springs large, six-horse stage coaches are run, the tourist reaching the Springs in time for luncheon, and leaving there after dinner, when leaving the park. The seven-mile ride between these points is full of interest, Electric peak and Sepulcher mountain being in full view, and a ride along the dashing Gardiner river, through the Gardiner cañon and past Eagle Nest Crag being attractive features.



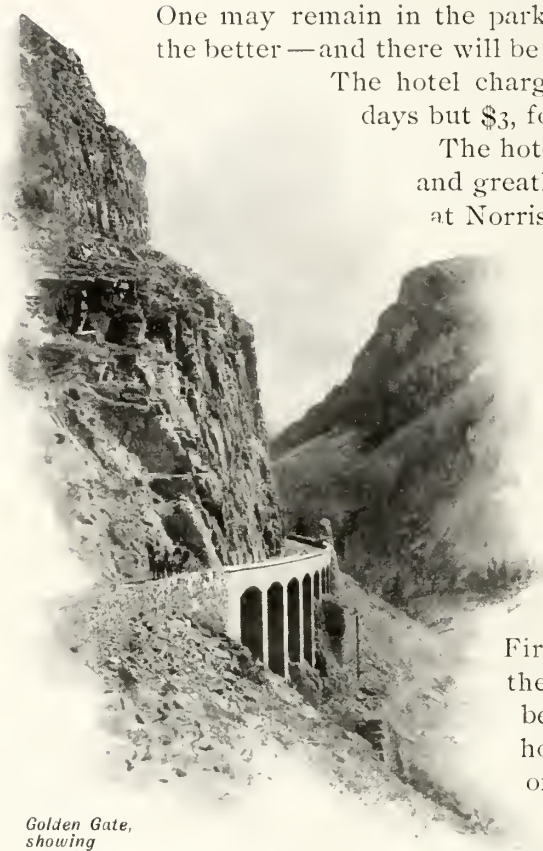


*A park coach.*

After spending an afternoon in viewing the terraces at the Springs, the following morning, if the usual five and a half day tour of the park is made, the traveler starts at 8 o'clock on his ride through Wonderland.

It should be understood that this particular trip *is not compulsory*. One may remain in the park as many days as one likes—the more the better—and there will be no additional charge for transportation. The hotel charges will be $4 per day, and after seven days but $3, for whatever time one is in the park.

The hotels have recently been entirely renovated and greatly improved. A new one, opened in 1901 at Norris geyser basin, is so located that it overlooks the basin, and one can sit on the wide veranda and view the "passing show." Another hotel is expected to be constructed at Upper geyser basin during 1902. These new hotels will give tourists an opportunity to stop and become better acquainted with the wonderful phenomena of the geysers.



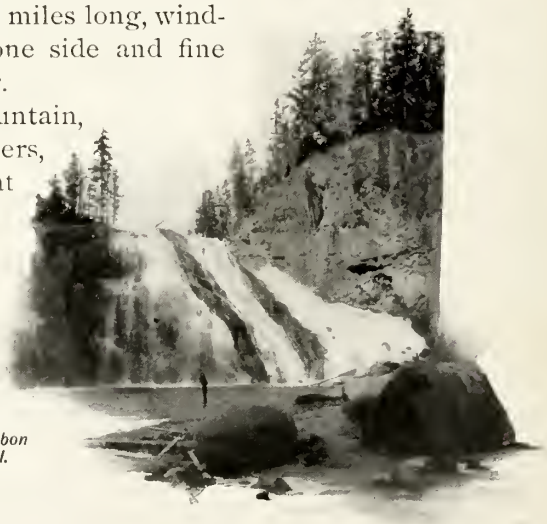
*Golden Gate, showing new $10,000 concrete viaduct.*

On the regular five and a half day tour, after luncheon and sightseeing at Norris basin, the coaches proceed, via Gibbon river, cañon, and fall, to the Firehole river, where, after stopping to enjoy the cascades of the Firehole, they roll along beside that glorious stream to the Fountain hotel at Lower geyser basin. The features of this day's ride are Golden Gate cañon and its new $10,000 concrete viaduct, a fine piece of substantial engineering; the cascades and fall of the Gibbon, and the cañon of the same, and the geysers at Norris.

The Golden Gate cañon is a mile long and 300 feet high, and very picturesque; Gibbon cañon is several miles long, winding, and with timbered slopes on one side and fine palisades 2,000 feet high on the other.

At Lower geyser basin the Fountain, Clepsydra, and Great Fountain geysers, a collection of beautifully transparent pools near the latter, and the Mammoth paint pots gradually open to one the variety to be found in this most noted of parks.

The day following, the tourist reaches Upper geyser basin, visiting



*Gibbon Fall.*

*Hotel at Grand cañon.*

en route the Midway geyser basin, where he sees the Excelsior geyser crater, Prismatic lake, and Turquoise spring, three of nature's masterpieces, where the colors of the spectrum are almost outdone. The Upper basin con-

*New hotel at Norris geyser basin.*

tains the largest number of geysers. Here they are found in greatest variety, from the Economic, that throws a stream to a height of thirty feet, to the Giant, that sails heavenward for 250 feet. This, however, does not tell the story. No statement can be made that will really give an idea of the almost infinite variety of hot water fountains to be found here. Each has its own idiosyncrasies that can not well be described in words. The other most prominent geysers are the Riverside, Grotto, Grand, Old Faithful, Giantess, Lion, Castle, and Bee Hive.

*Hotel at Mammoth Hot Springs.*

If one desires to observe well a very unusual manifestation of nature, here is the spot at which to stop for a week or more. Besides the geysers, Black Sand pool, Specimen lake, Emerald pool, and Sunset lake will cause one to think that the bard of Avon must have had a dim idea of Yellowstone Park when he gave utterance to the sentiment that there are more things in heaven and earth than mankind, of whom Horatio was the effigy, dreamed of.

Upon leaving Upper geyser basin the traveler winds up to and over the great Continental divide — about 8,350 feet above sea level — where the waters are parted, some flowing to the Mexican gulf, the others to the Pacific. The region is very interesting to the geographer and the scenery itself is of a high order, particularly as the coach reaches Shoshone point and a view of much loveliness suddenly breaks on the vision.

Then follows Yellowstone lake, an ideal inland sea, mountain girt, supposed to be the second highest navigable and navigated body of

*The Gibbon river drive.*

*Tourists around Handkerchief pool.*

water in the world, and which easily appeals to all that is poetic and sentimental in one's nature. Near the outlet of the lake another homelike, electric lighted, delightfully placed hotel is found, where one will stop for more than a day if one desires to rest in the most seductive and satisfying sense of the word.

Yellowstone lake is noted for its salmon trout, and they are so plentiful and greedy that even the tyro may catch them, and all are welcome so to do.

*Chocolate Spring cone along Gibbon river.*

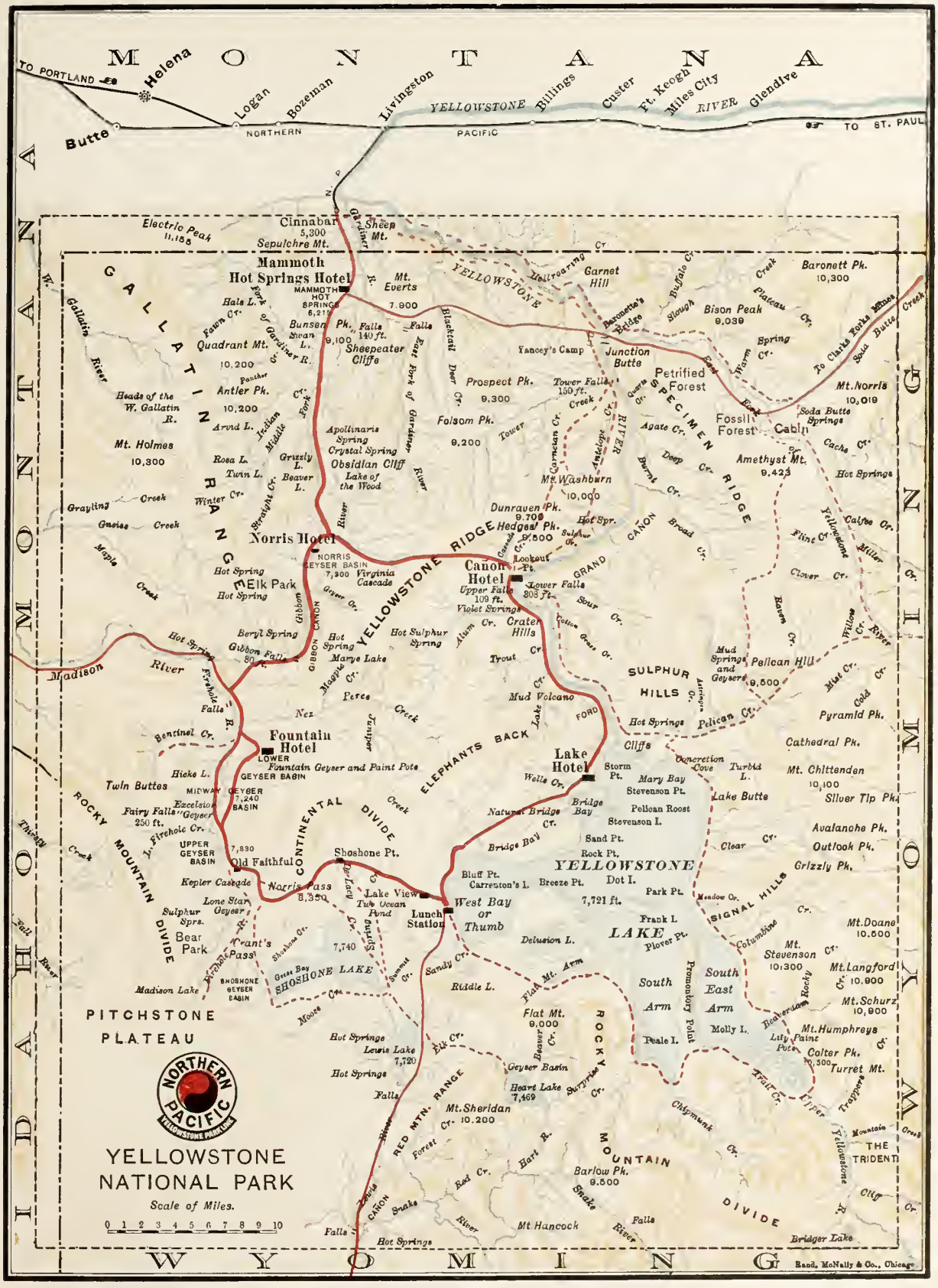
The fourth day's journey in the park is the eventful one, for the traveler then reaches the climax of the tour — the Grand cañon with those two peerless cataracts, the Upper and the Lower falls of the Yellowstone.

The Grand cañon is undoubtedly the finest thing of the sort in the world. When man attempts the task of depicting its glories he falters. The painter on canvas and the word-painter both hesitate, appalled at the prospect. The gorge is such a jungle of sculptural and architectural forms and such a wanton riot of color that one knows neither where to begin nor end. It is only upon a close study and analysis of this remarkable chasm that the full force of this is borne in upon one. The first effect, beyond surprise, is that of joy, wonder, of deep yet enthusiastic admiration at being permitted to stand in the

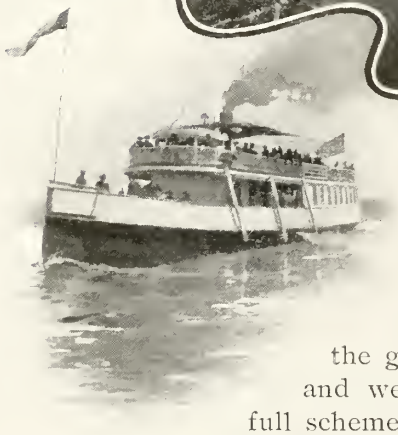
*Silver Gate and Bunsen peak.*

*Cooking a trout just caught in the river in the hot pool on the river bank*

*A stretch of the Firehole river.*


MONTANA
TO PORTLAND
Helena
Butte
Logan
Bozeman
Livingston
YELLOWSTONE RIVER
Billings
Custer
Ft. Keogh
Miles City
Glendive
NORTHERN PACIFIC
TO ST. PAUL
IDAHO
WYOMING
Electric Peak 11,155
Cinnabar 5,300
Sepulchre Mt.
Sheep Mt.
Mammoth Hot Springs Hotel
MAMMOTH HOT SPRINGS 6,215
Mt. Everts 7,900
YELLOWSTONE
Hellroaring
Garnet Hill
Baronett Pk. 10,300
Bison Peak 9,039
Buffalo Cr.
Plateau Cr.
Spring Cr.
To Clarks Fork Mines
Gallatin Range
Hale L.
Fawn Cr.
Quadrant Mt. 10,200
Bunsen Pk. 9,100
Swan L.
Falls 140 ft.
Sheepeater Cliffs
Yancey's Camp
Junction Butte
Barronette's Ridge
Petrified Forest
Specimen Ridge
Fossil Forest
Cabin
Mt. Norris 10,019
Soda Butte Springs
Antler Pk. 10,200
Arnid L.
Heads of the W. Gallatin R.
Mt. Holmes 10,300
Rosa L.
Twin L.
Grizzly L.
Beaver L.
Apollinaris Spring
Crystal Spring
Obsidian Cliff
Lake of the Wood
Prospect Pk. 9,300
Folsom Pk. 9,200
Tower Falls 150 ft.
Mt. Washburn 10,000
Amethyst Mt. 9,423
Hot Springs
Dunraven Pk. 9,709
Hedges Pk. 9,500
Norris Hotel
Norris Geyser Basin 7,300
Virginia Cascade
Canon Hotel
Lookout Pt.
Lower Falls 308 Ft.
Upper Falls 109 ft.
Violet Springs
Elk Park
Hot Spring
Beryl Spring
Gibbon Falls 80 ft.
Gibbon Canon
Hot Sulphur Spring
Crater Hills
Marye Lake
Mud Volcano
Mud Springs and Geysers
Pelican Hill 9,500
Sulphur Hills
Pyramid Pk.
Cathedral Pk.
Madison River
Nez Perce Creek
Fountain Hotel
Lower Geyser Basin
Fountain Geyser and Paint Pots
Elephants Back
Lake Hotel
Hot Springs Cliffs
Pelican Cr.
Twin Buttes
Midway Geyser Basin 7,240
Excelsior Geyser
Fairy Falls 250 ft.
Upper Geyser Basin 7,330
Old Faithful
Kepler Cascade
Continental Divide
Rocky Mountain Divide
Shoshone Pt.
Norris Pass 8,360
Lone Star Geyser
Sulphur Spgs.
Bear Park
Trant's Pass 7,740
Lake View
Two Ocean Pond
Lunch Station
West Bay or Thumb
Storm Pt.
Mary Bay
Stevenson Pt.
Pelican Roost
Stevenson I.
Sand Pt.
Rock Pt.
Bridge Bay
Natural Bridge
Lake Butte
Silver Tip Pk.
Avalanche Pk.
Outlook Pk.
Grizzly Pk.
Yellowstone Lake
Bluff Pt.
Carreston's I.
Breeze Pt.
Dot I.
Park Pt.
7,721 ft.
Frank I.
Plover Pt.
Delusion L.
Signal Hills
Mt. Doane 10,500
Mt. Stevenson 10,300
Mt. Langford 10,900
Mt. Schurz 10,900
Mt. Humphreys
Colter Pk. 10,300
Turret Mt.
South East Arm
Molly I.
Peale I.
Promontory Point
Flat Mt. 9,000
Geyser Basin
Heart Lake 7,469
Mt. Sheridan 10,200
Red Mtn. Range
Barlow Pk. 9,500
Mt. Hancock
The Trident
Bridger Lake
Pitchstone Plateau
Shoshone Lake
Shoshone Geyser Basin
Lewis Lake 7,720
Madison Lake
Yellowstone National Park
Scale of Miles.
0 1 2 3 4 5 6 7 8 9 10
Rand, McNally & Co., Chicago

*Yellowstone lake, Stevenson island, and Lake hotel from mountain back of hotel.*



*Steel steamer "Zillah," on Yellowstone lake.*

presence of such a profound pageant and creation. The man or woman gifted with a true, refined sense of the sublime, will experience a peculiar conflict of emotions upon reaching the rim of the cañon.

Take, for example, one of those sharp, tooth-like pinnacles at Grand view for a footstool, where the gorge flares wide, the piers and peninsulas of white and weather-stained rock rise in dire confusion, and the full scheme of color, oriental in its richness and almost barbaric in its novelty and variety, is revealed in all its breadth and magnificence. I defy anyone born of woman to describe the sensations which possess him or her, standing at the edge of the chasm at this point. The walls drop, vertical and jagged, deep into the abyss, succeeded by long slopes smoothed and almost polished by the action of the elements. Far down at the bottom rushes the mighty river, its deep, beautiful emerald modulated by the foam, as it sweeps around the bases of gigantic buttresses and tumbles over small precipices, or rushes down bowlder-strewn declivities. As for color—but hold! If you remember how, in a kaleidoscope, the colors apparently rush together indiscriminately and without order, and yet arrange themselves in beautiful harmony and combination, you may know something of how these reds and grays, and whites and browns, and yellows and lavenders, and blacks and greens, run together in glorious and harmonic confusion, while the green of the forest that fringes the edge of the cañon and the blue of the heavens high above, both enter into that divinity which doth in truth seem to hedge the spot about.

The two falls are important members of the cañon equation. The Upper one, 109 feet high, leaps over the basalt precipice in wild glee

and abandon, while nearly a mile below, the Great or Lower fall, as if in keeping with its more dignified position at the very head of the gorge, plunges 308 feet into the chasm in grand and majestic style.

The Lower fall is best seen from Point Lookout, not far from the Grand cañon hotel. Another point where the view is most striking, and where many think the best view of the cañon is to be obtained, is Inspiration point. Here, too, the fall is seen but is dwarfed by distance. At Inspiration point many will exclaim with Shakespeare :

"I'll look no more,
Lest my brain turn, and the deficient sight
Topple down headlong."

At the Grand cañon man forgets himself and remembers his Creator as in the days of his youth.

On the fifth day the tourist returns via Norris basin to Mammoth Hot Springs and thence to Cinnabar and the tour of Wonderland is ended.

*Lower fall from Point Lookout.*

## MAMMOTH HOT SPRINGS.

This place is, as it were, the capital of Yellowstone Park.

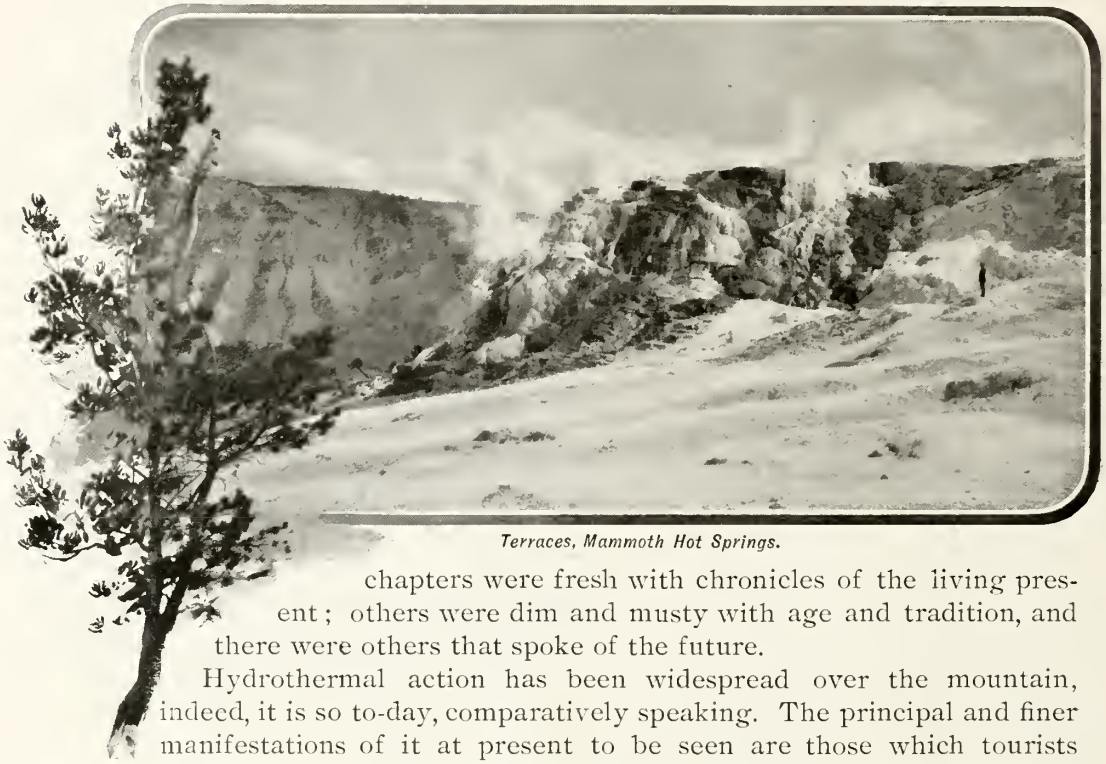
Here are Fort Yellowstone and the military commandant, the latter also the acting superintendent of the park ; here are the headquarters of the U. S. Engineer who has charge of all engineering operations, road and bridge construction, etc., in the park; here are the offices of the hotel and transportation companies, and from this point the actual tour of the park is begun.

The peculiar phenomena to be observed here, are probably all in all, the least interesting in the park. This, however, is purely from a relative and comparative standpoint. Could this spot be picked up and transported to a park in any American city, it would be looked upon as the eighth wonder of the world. As it is, tourists who see it for the first time are carried away with its beauty and unique individuality, and it is only after a tour of the park that they realize that relatively it is one of the lesser glories of Wonderland.

To him who has the inclination and patience to freely wander about

the slopes of Terrace mountain, there will be unfolded a strange, strange story. Life, death, decay, and life again, extending over a period which no man may dare name, is told on every side. This strange and marvelous story was never borne in on me so strongly as it was last summer, when, alone, I spent a forenoon in slowly climbing about the mountain. Beginning with Liberty Cap, Cleopatra terrace, and the Giant's Thumb, I wended my steps here and there, working higher and higher about the terraces and far back among the higher slopes in the timber, where a tourist only occasionally penetrates.

The volume I was studying was new, and yet old; some of its



*Terraces, Mammoth Hot Springs.*

chapters were fresh with chronicles of the living present; others were dim and musty with age and tradition, and there were others that spoke of the future.

Hydrothermal action has been widespread over the mountain, indeed, it is so to-day, comparatively speaking. The principal and finer manifestations of it at present to be seen are those which tourists regularly see. But hidden away, and much higher up the mountain, somewhat remote from the trails usually followed, are other evidences of this action.

All along the mountain-side are seen the relics of bygone ages. Hot springs formation, old and disintegrated, lies on every hand. Over this dead and decaying débris, new life in the form of tree and shrub has come to gladden the landscape. Old and deep pits, the craters of former springs, have become filled with the accumulations of time, and from these ancient vents trees, now themselves aged, have sprung. Lines of cliffs rising tier on tier, old, withered, crumbly, mark the contour of ancient and decorated terraces, as Angel, Cleopatra, and

Pulpit terraces do now, and exhibit the wreck, ruin, and degradation that follow the cessation of terrace building.

To retrace our steps, the bleak common upon which Fort Yellowstone and the hotel are built, with its deep circular pits, dried up and filled with débris, is also a vestige of the past. These holes were, without doubt, beautiful springs at one time, and the water that flowed from them formerly spread over the plain itself, probably finding its way, as does that from the springs now, into the Gardiner river. It would be interesting to know, actually, whether the heated energy of those old days was concentrated now here, now there, or whether it was at one time scattered over the entire mountain-side, and that the present focus of action is but the residuum of ancient and mightier power.

It would be interesting, too, to have seen Liberty Cap in the heyday of its youth, and to know how long it was in process of construction, and how long it has been as we now see it.

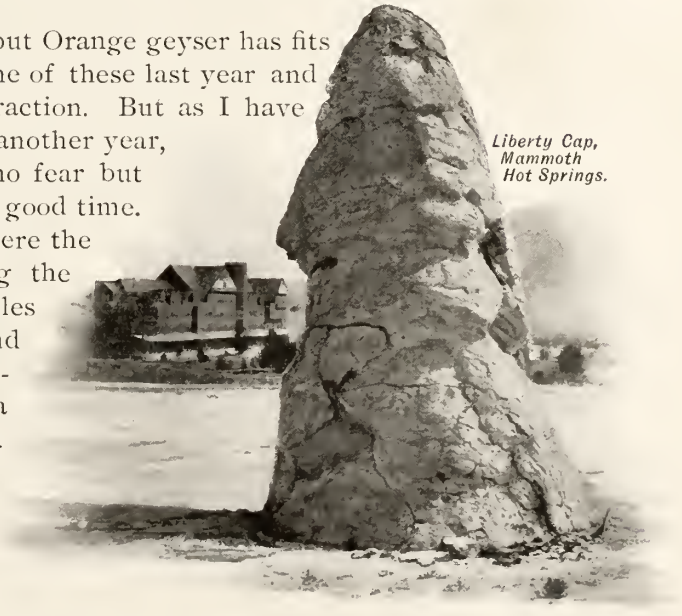
The tourist finds a goodly variety here. Minerva terrace has been dead for two or three years, but Cleopatra has taken on new and radiant attire, and Pulpit terrace, it seems to me, was never finer than in 1901. Angel terrace never savored more of the angelic, and the springs of Jupiter were never more beautiful.

Narrow Gauge terrace, some 350 feet long and from two to ten feet wide, with its chimneys and domes, was resting from its labors last year, but is very likely to break forth with renewed vigor this year.

Above the Narrow Gauge, and surrounded by monuments of the past, lies that strange ridge some 700 or 800 feet long, known as the White Elephant. Once this entire ridge may have been active; in recent time something like 100 feet of it have been modestly eruptive, and it remains about the same from year to year. The ridge is from six to ten feet in width, with four large travertine bosses, emitting hot water, at one end.

Bath lake is always enticing, but Orange geyser has fits of sulkiness or laziness. It had one of these last year and was therefore devoid of much attraction. But as I have seen it thus before, only to find it, another year, more radiant than ever, I have no fear but that it will come out of its sulks in good time.

The hotel at the Springs is where the life of the place centers during the season. At evening sociability rules there. Everybody is welcome, and informal hops, or music by the colored musicians of the hotel are a part of the program. One can array himself or herself in full



*Liberty Cap, Mammoth Hot Springs.*

The White Elephant.

Coating Spring terrace.

dress or not, as one chooses, it makes no difference, so far as participating in the festivities goes. The gathering is a cosmopolitan one, and officers' uniforms, business suits, dress suits, fine gowns, and shirt waists, are all to be seen flitting about.

What is true here is true of all the hotels, and one can take as much or as little part in what is passing as one desires, the principal thing being to enjoy one's self as one pleases.

## THE DECADENCE OF THE GEYSERS.

It has become quite the thing of late for some one to break forth now and then into a learned disquisition upon the decline of the geysers. These attacks of geyseritis, as one might term them, like tonsilitis, appendicitis and cognate itises, will probably have their day, pass away, and no one, not even the geysers, be seriously affected. At present this malady seems to attack *eminent scientists*, principally, and evidently those who are *so* eminent that a little knowledge leaveneth the whole lump, so that they understand the entire matter even though actual study of the suffering patient may have been brief and fleeting. These geyser doctors, like the medicine man of the tribes and the voodoo of the south, play upon the fears of their victims. "The geysers are dying — haste, quickly, or you will be too late" — is the tenor of their cry.

The writer is no "eminent scientist"; he hopes, however, that with others, some of them men of scientific attainments who have an extensive acquaintance with the geysers, he has a modicum of common sense and can state the truth in this matter.

Seriously, while the hydrothermal phenomena found in Yellowstone Park, are — to quote Arnold Hague of the U. S. Geological Survey, an

eminent geologist, indeed, than whom no better authority exists — "in a sense, evidences of the gradual dying out of volcanic energy," no one need worry over the fact. This dying has been going on for centuries and will continue for centuries to come.

Referring to the changes constantly taking place here, which fact is known of all men, Mr. Hague says: "It is evident that to accomplish such changes, even through more intense action than the present, a long period of time was required."

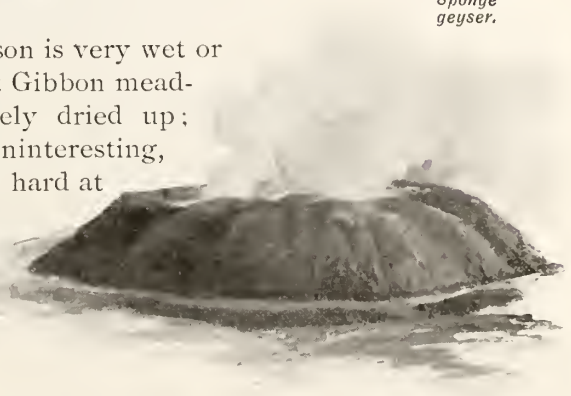
As a matter of fact, since Colter discovered the geysers in 1807, we know through Ferris' writings in the 30's, Bridger's tales of them in the 40's, and the careful observations made since Folsom visited them in 1869, that there have been no *material* changes. That changes *are* going on continually is a fact, but in some cases it is due largely, or even wholly, to the character of the seasons; in others it is what might not improperly be termed a redistribution of energy, for the equilibrium is practically, at least, maintained.

The arguments of the "eminent scientists" are all based upon the same data. If their premises or assumptions were true, their conclusions might be, but the former are false

Roaring mountain, so called, because it never roars now, is one of the instances given of dying geyserism. It is doubtful if it ever did roar. It is safe to say that if it did, it was one of those exceptional changes brought about, for a time, by some hidden spasm of nature, but temporary in its action and effect.

The Black Growler is another example. Those familiar with Norris geyser basin know that the steam power formerly *concentrated* here in *one* vent, now expends itself in two and even more fumaroles, and that there is no real diminution of force.

Among the geysers there are incidental changes continually, but there is no real loss of power. If one of them plays with unusual vim this year, another may usurp its place next season. One that was entirely inactive last year may, this year or the next, be seen in fine eruption. They all have their peculiarities, based, practically, on processes hidden from us, but in ceaseless operation, and the effects of which, only, we see. In many of the geysers we know that there has been no real change whatever in more than thirty years. The Fountain geysers, Old Faithful, Economic, Giant, Giantess, Castle, and Bee Hive are examples of this.



*Sponge geyser.*

The paint pots may vary, as the season is very wet or very dry. I have seen the paint pots at Gibbon meadows under the last condition, absolutely dried up; under the former, very sluggish and uninteresting, and, when the precipitation was normal hard at work again in the good old way.

The most plausible argument

1. *Lone Star geyser.*
2. *Old Faithful geyser.*
3. *Riverside geyser.*
4. *Giant geyser.*

for the death theory is to be found at Mammoth Hot Springs, but he would be rash, indeed, who would boldly assert this theory to be a fact, basing his assertion upon the phenomena there.

There are changes at this point beyond question, but they are of much the same character as among the geysers.

I have seen both Orange geyser and Narrow Gauge terrace apparently lifeless in recent years, yet Phœnix-like, they have subsequently resumed action as perfectly as ever. A few years ago Cleopatra terrace was an inconspicuous feature here, while Minerva terrace was glowing in warmth of color; to-day the situation is precisely reversed.

*Devil's Ink Stand in eruption, Norris geyser basin.*

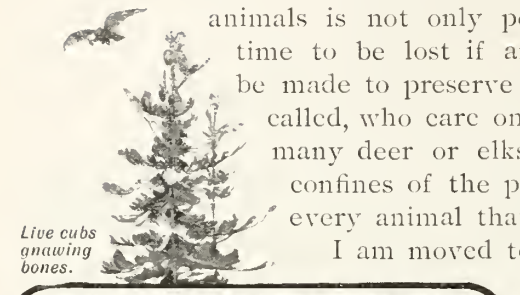
While I earnestly entreat everyone who can do so to visit this great Wonderland at the earliest moment, no one need worry and hasten because of fear that the play is about to be played out. The geysers will be playing to delighted audiences long after this and many succeeding generations have passed off life's stage.

A splendid refutation of the dying geyser theory has recently been made in the public press by Rev. Dr. Roland D. Grant of Vancouver, B. C., an eminent Baptist clergyman and lecturer, and one thoroughly conversant with the entire subject through repeated visits to the park and a study of geyserism. Capt. H. M. Chittenden, of the Engineer Corps, U. S. A., has also contributed to the discussion.

## WILD ANIMALS IN THE PARK.

It is undeniable that, to many tourists, the wild animals in the park are a source of as much interest as are the geysers. This fact justifies the efforts made by the Government, through the succeeding superintendents of the park, for the protection and natural propagation of the game animals indigenous to the region. In order, however, to properly preserve these fast disappearing relics of wild animal life to future generations, additional territory should be added, either to the park proper or to the forest reserve about it, so that absolute protection can be maintained. While the present park affords an unsurpassed summer range and breeding ground for antelope, elk, deer, bear, moose, mountain sheep, etc., it is not so well fitted for a winter range. While, for example, from 30,000 to 50,000 elks may graze within the park limits during summer, not more than 8,000 or 10,000 can find grazing grounds during the winter. The rest are compelled

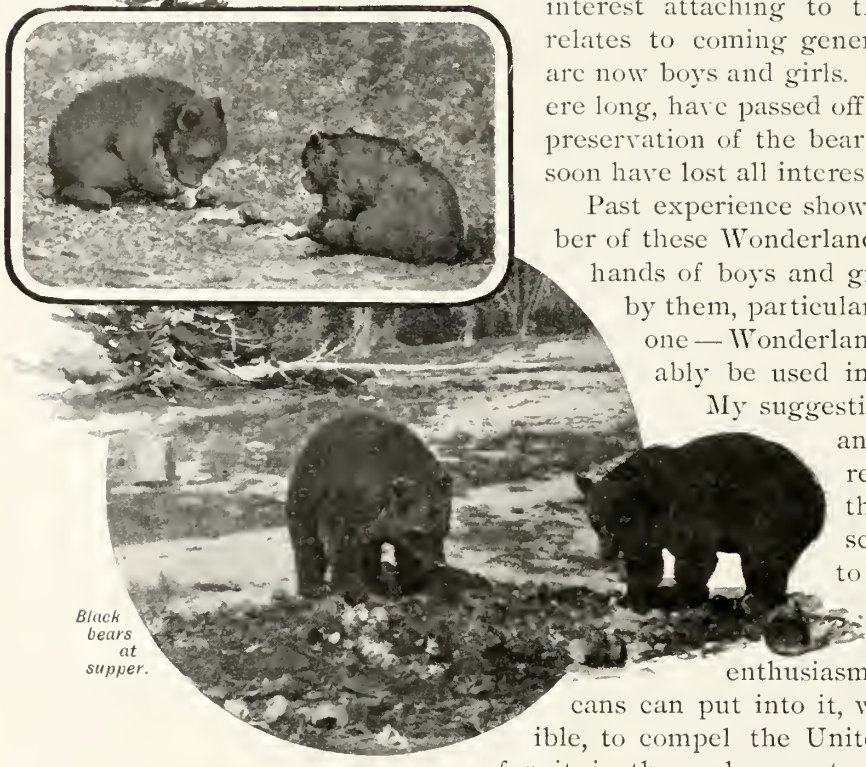
to range outside the park lines, when, of course, the protection of the Government gives way to that of the State, and under the game laws of the States adjoining the park, the killing of many of these animals is not only possible, but is actually a fact. There is no time to be lost if any real, methodical, and scientific effort is to be made to preserve them. Poachers, pot hunters, game hogs, so called, who care only for their own selfish pleasure in killing as many deer or elks as they can, skulk, more or less, about the confines of the park, trying to evade game laws, and to shoot every animal that wanders beyond its protecting boundary.



*Live cubs gnawing bones.*

I am moved to make a suggestion. The greater value and interest attaching to this matter is as it relates to coming generations — those who are now boys and girls. The rest of us will, ere long, have passed off life's stage, and the preservation of the bears and antelopes will soon have lost all interest for us.

Past experience shows that a large number of these Wonderland books fall into the hands of boys and girls, and are studied by them, particularly in schools. This one — Wonderland 1902 — will probably be used in the same manner. My suggestion is, that the boys and girls who may read this chapter take the initiative, through school organizations, to start a national movement that, with the vim and enthusiasm that young Americans can put into it, will become irresistible, to compel the United States Congress — for it is they who must do it — to *now and effectually* arrange for game protection in the Yellowstone Park region for all future time. Many of you have been delighted by the lectures, stories, and pictures of Seton-Thompson — his name has recently been legally rearranged to Ernest Thompson-Seton — Fraser, and others; now go to work, and, through your friends and your own ceaseless efforts, rain down on Congress such an avalanche of petitions, resolutions, etc., that they will have to grant your demand through sheer necessity. And what a spectacle it would be, were it practicable, to see the halls of the capitol at Washington invaded by a host of bright, eager, irrepressible boys and girls, pleading with



*Black bears at supper.*

*On Antelope creek.*

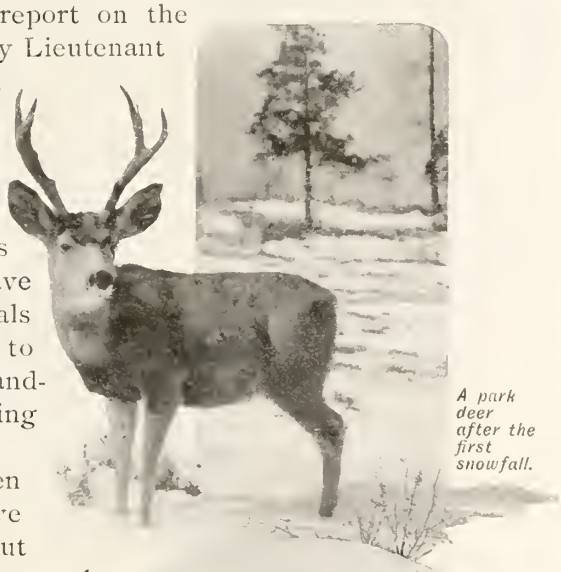
politicians and congressmen to protect and save a remnant of the animal life that recently was so numerous in the West.

Three things are wanted: More territory attached to the park; more money for those who have to care for the park, more troops and scouts to guard and patrol the region.

Now who will start the ball rolling?

In 1897 a careful and detailed report on the wild animals in the park was made by Lieutenant — now Captain — Lindsley, which will probably answer for the present time.

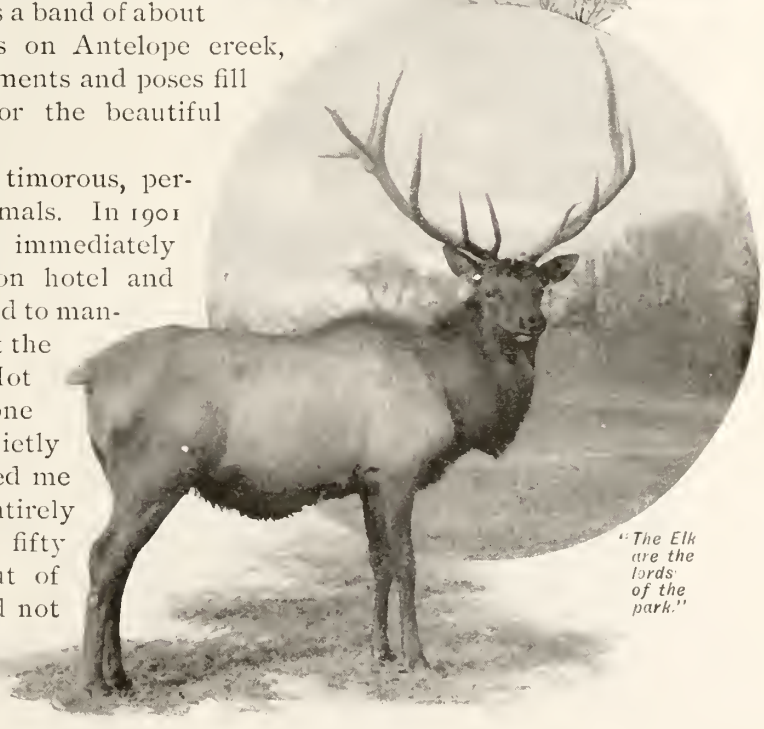
Moose, deer, and antelope are found in moderate numbers, and the two former seem to be increasing. The antelope range is such that coyotes kill many of them, and hunters have heretofore shot many when the animals were compelled, in severe winters, to cross the line of the park. Notwithstanding, these seem to be, at least, holding their own.



*A park deer after the first snowfall.*

In riding over the lower trail between the Grand cañon and Tower fall, I have never failed to run across a band of about ten or twelve antelopes on Antelope creek, and their graceful movements and poses fill one with admiration for the beautiful creatures.

The deer seem less timorous, perhaps, than the other animals. In 1901 several of them grazed immediately around the Grand cañon hotel and apparently paid little heed to mankind. In climbing about the terraces at Mammoth Hot Springs I came upon one among the trees that quietly but most intently watched me as I circled almost entirely around him, at about fifty yards distance, until out of his sight and he evinced not the slightest fear.



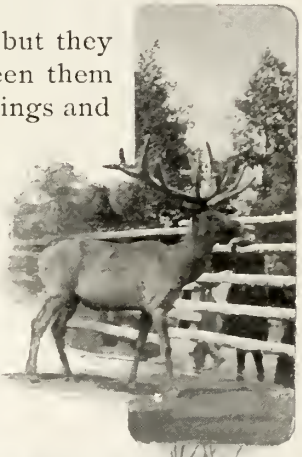
*"The Elk are the lords of the park."*

Copyright by the N. Y. Zoölogical Society.

There are several bands of mountain sheep in the park, but they are rarely seen except in winter, when they draw nearer to the haunts of men.

Coyotes are numerous, indeed, too much so, but they do not frequent the traveled roads. I have seen them twice near the road between Mammoth Hot Springs and Yancey's.

The bears are very much in evidence. The black, brown, and grizzly, all are to be found. They are inoffensive and one of the sights of the park. They are to be seen near all the hotels except at Mammoth Hot Springs, and during the tourist season forage on the hotel refuse. The tourists, often, almost surround them at meal time in their efforts to kodak them, and some comical situations occur.

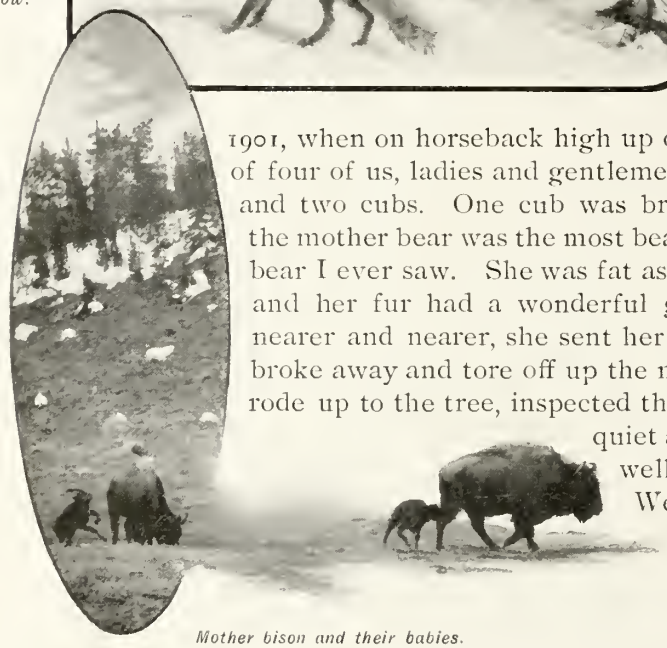


*Tame elk at Mammoth Hot Springs.*

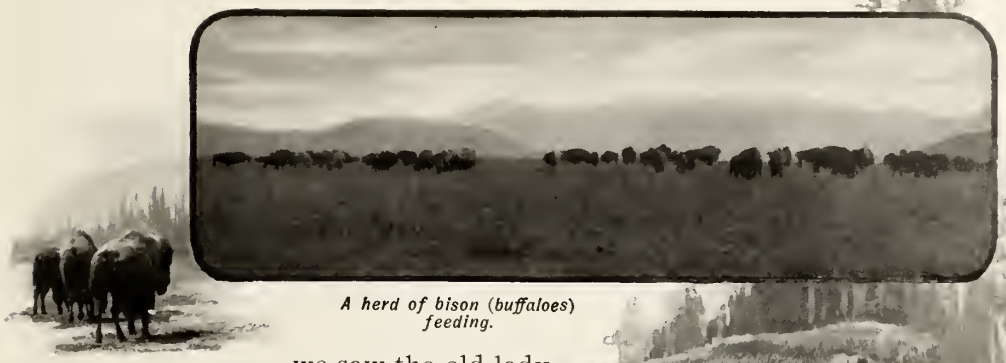
From one to twenty bears may be seen at the evening meals, and they are often found at other times and places. In 1901, when on horseback high up on Dunraven peak, a party of four of us, ladies and gentlemen, came upon a black bear and two cubs. One cub was brown, the other black, and the mother bear was the most beautiful specimen of a black bear I ever saw. She was fat as butter, a deep jet in color, and her fur had a wonderful gloss. As we approached nearer and nearer, she sent her cubs up a tree and finally broke away and tore off up the mountain out of sight. We rode up to the tree, inspected the cubs who remained very quiet and stretched out on a limb well up toward the tree top. We had ridden some distance away and higher up the mountain before

*A beaver's house in the park.*

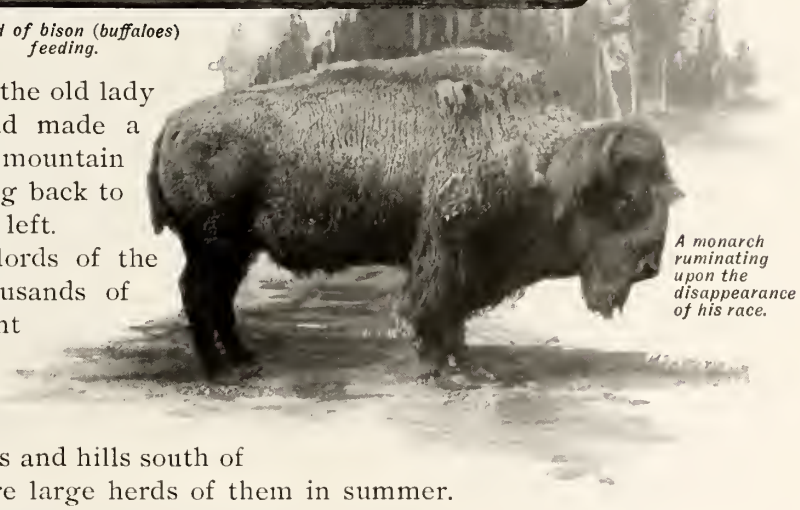
*Reynard foraging in the snow.*



*Mother bison and their babies.*



*A herd of bison (buffaloes) feeding.*



*A monarch ruminating upon the disappearance of his race.*

we saw the old lady bear again. She had made a wide circuit down the mountain and was slowly working back to where her babies were left.

The elks are the lords of the park. There are thousands of them and they frequent many localities, and tourists may infrequently see them. In the timbered ravines and hills south of Shoshone lake there are large herds of them in summer. A favorite range, especially for mother elks and their young, is on the headwaters of Trout and Alum creeks on the east slope of Mary's mountain in Hayden valley. Twice, in riding on horseback across this charming stretch of country, I have seen elks in hundreds. In 1901 we found here a very large herd of male elks, and farther along the females and calves in a still larger band. In an enclosure at Mammoth Hot Springs there are always a number of young elks and deer, and a study of them is most interesting. These youngsters become very tame and docile and seem to lose their fear of men.

The buffaloes, or bisons, that once were so numerous in the park, have sadly decreased in numbers. How many there may be is not really known, but there are probably not to exceed fifty. They range in the remote corners of the park where no one except the scouts sees them, and it is difficult to keep accurate count of them.

The buffaloes formerly ranged in Hayden valley, and a few years ago a huge corral was built there and hay cut and stacked in the hope that some of them might be corralled and become somewhat domesticated. The result was a failure; few buffaloes were seen, but the elks reaped a rich harvest and devoured all the hay. It is deeply to be regretted that the Government has never supplied soldiers enough to properly guard the park. Because of this, poachers were able to sneak in to the unprotected parts of the region, and before any real and effectual resistance

could be made they had committed tremendous slaughter on the buffalo herds.

It is to be hoped that those remaining will be able to slowly replenish the losses heretofore met, and that this noble animal will not be utterly wiped out in the world's Wonderland.

At the present time, when cities and individuals are spending large sums to establish zoölogical gardens and natural history parks, where determined efforts are being made to particularly preserve and propagate this species, certainly in the greatest national park in the world efforts should be made to carry forward this work to success, if success be possible.

Beaver, mink, otter, marten, lynx, wild cats, and foxes abound. The former seem to be increasing to a gratifying degree, evidences of which the tourist may easily see at Beaver lake.

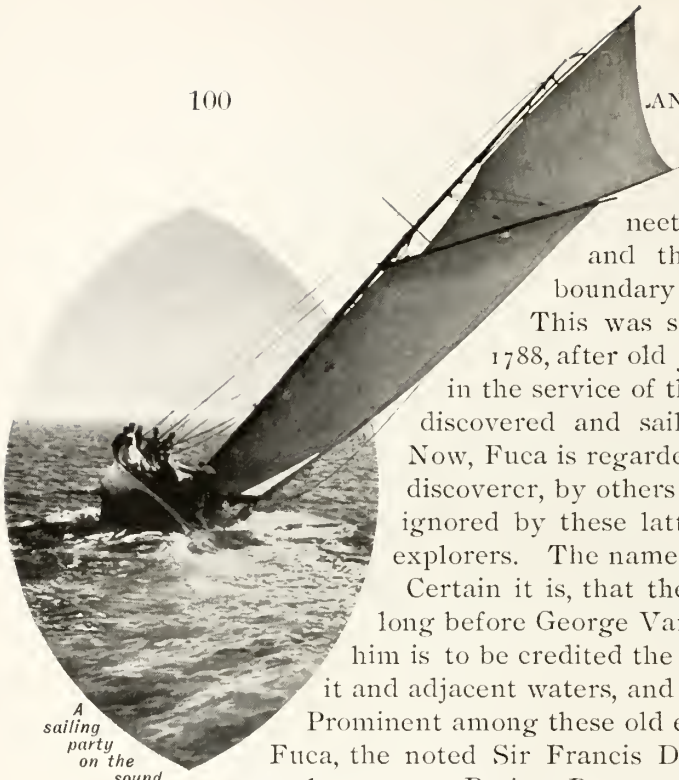
If proper steps are taken at once this great park may largely be made in years to come, an epitome of what the West was in its wild and primeval days, so far as its fauna is concerned. Fifty years hence, under wise and successful management, the animals will then indeed rival the geysers in popular interest.

# PUGET SOUND AND ALASKA

FROM 1792 to 1902 is a period of 110 years. In the former year Capt. George Vancouver, of the British Admiralty, thoroughly explored the waters of Puget sound and named the islands therein, and the adjoining headlands, bays, points, and mountains. Although by the treaty of 1846 this region — most of it — became undisputed United States territory, to this day nearly or quite all of Vancouver's names are accepted as the proper ones, so well and accurately did he do his work.

The story of the discovery and exploration of this region is an inviting, albeit, a somewhat confusing one. It dates from about the middle of the sixteenth century and the Spaniards were the pioneers. It seems almost certain, in reading the somewhat confused accounts of the time, that the Spanish adventurers must have seen nearly every important river, bay, sound, cape, etc., to be found on the coast. But their records appear to have been very carelessly made, or so filled with exaggerations that with the inaccurate astronomical observations of those days, uncertainty and doubt have been cast upon their discoveries, so that it has been difficult to correlate their geographical names with those of later discoverers.

As an example of this uncertainty, take the Strait of Juan de Fuca, — the apocryphal Strait of Anian — a most important body of water



A sailing party on the sound.

lying between Vancouver's island and Washington, connecting the sea with Puget sound, and through which the international boundary runs.

This was so named by Captain Meares in 1788, after old Juan de Fuca, a Greek pilot, who, in the service of the Spaniards, is supposed to have discovered and sailed over its waters about 1600. Now, Fuca is regarded by some as a true and actual discoverer, by others as a myth, and he is absolutely ignored by these latter in their accounts of the old explorers. The name survives.

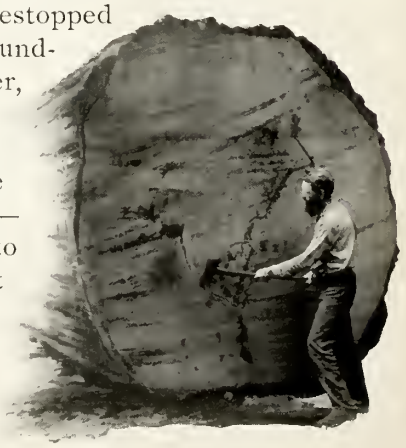
Certain it is, that the Strait of Fuca was well known long before George Vancouver entered it in 1792, but to him is to be credited the first attempt to carefully explore it and adjacent waters, and most thoroughly did he do it.

Prominent among these old explorers were Ferrelo, Viscaino, Fuca, the noted Sir Francis Drake, and Cavendish in the sixteenth century; Bering, Perez and Martinez, Heceta and Bodega, Captain Cook, Berkeley, Meares, Vancouver, and Gray—the latter the only Yankee of them all—in the eighteenth century.

Many and diverse were their experiences. Suffering and death were common to most of them, but they writ their names high on the scroll of daring and adventure, and their works live after them. It is a sad reflection that the Spaniard, although the earliest and one of the most persistent adventurers in northwestern waters, owns to-day not one foot of land in the region for which he did so much. The Spanish navigator swept the main well up toward the 60th degree of north latitude,—now his farthest north is found below the 33d degree of latitude, and even then it is not the real Spaniard at all, only a somewhat remote descendant still bearing a Spanish flavor.

It is a startling fact and one that we can well regret the necessity for, that the *coup de grace* to Spain's hold on territory in the Pacific came in the Philippine War from the United States, a nation whose title to the Oregon country was so firmly strengthened by the Spanish quitclaim thereto in 1819, that it effectually estopped England's efforts to place the international boundary at or below the mouth of the Columbia river, which river mouth was first seen by a Spaniard and first explored by a Yankee skipper.

A reminder of the Spanish occupaney of the Northwest is found—and let us rejoice in it—in the few Spanish names that still adhere to geographical points in and around the Puget sound country.



End of big fir saw log.

The name Puget sound—Puget's sound it was originally—is now popularly applied to a much larger area of water than as given by Vancouver. The latter designated as Puget's sound only that part of this inland sea extending westward from the bend in the neighborhood of Tacoma, to and beyond Olympia. North of this elbow the water lane reaching to the eastern extremity of the Strait of Fuca, was called by Vancouver, Admiralty inlet. The term Puget sound is now generally used to include the entire body of water below the 49th parallel or international boundary, including the Strait of Fuca itself.

*A Puget sound lumber mill.*

*In a Washington forest.*

The inlets, passages, or channels of this complicated body of waters are, most of them, long and narrow, and some of them very crooked.

The total shore line of Puget sound is authoritatively stated to exceed 1,800 miles. There are no finer or better protected harbors in the world than here, and the sound is dotted with islands susceptible of high cultivation. The waters are of such depth that the largest vessels engaged in the world's commerce can and do easily navigate them. On the eastern shore the timbered slopes of the Cascade range rise to nearly 15,000 feet above the water, while on the west lies what may be broadly termed the Olympian peninsula, of which the snowy and ragged Olympic range forms the predominant characteristic. This range towers between the sound and the ocean to a maximum height of 8,000 feet, and forms an almost absolute barrier to the ocean winds, forcing them to rise high above the surface of the Sound country in their passage eastward.

The shore line is an alternation of bold, bluffy headland and low points and spits, the latter apt to project well out into the sound from the mainland and be ornamented with clean, white lighthouses.

What is known as the Sound country may truthfully be said to be,

I presume, the most tremendous forest area in the known world. Imagination can seareely conceive of the reality from either printed or verbal description, or even from photographie reproduction. I had supposed that I had some real idea of a Puget sound forest, but when, for example, I stood in the midst of that magnificent Lake Crescent forest on the south shore of Fuca's Strait, I was dumb with amazement.

It is easy to talk or write about trees 200 or 300 feet high and eight, ten, or even twenty feet in diameter; to state that hundreds of thousands of feet of timber have been taken from an acre; that from 60,000 to 70,000 feet of timber have been cut from one tree, or that nearly 75,000 shingles have been made from one log, but the human mind does not seem to be able to grasp, from sueh abstract statements, the aetual, eoncrete faet. The eye must see the tree, the log, the aere, the forest itself, in order to have the mind understand.

*Mount Rainier from Tacoma.*

A eareful estimate by the United States Geological Survey gives the amount of timber embraeed within the limits of the region under eonsideration, as exeeeding 103 billions of feet, a quantity too vast for the mind to really apprehend, let alone comprehend.

In attaching names to the points of this region Vaneouver well remembered his friends. Puget's sound was so named after one of his Lieutenants, Peter Puget, and Mount Baker after another. Hood's canal, a long, narrow, rather sinuous arm leading southwestward from near the head of Admiralty inlet, was named in honor of Lord Hood, as was also Mount Hood in Oregon. Whidbey's Island was also named for one of his offieers, and Mount Rainier was so ealled after Rear Admiral Rainier of the English navy. New Dungeness was named for its resemblanee to Dungeness in Kent, England. This will show, in some degree, his method of nomenelature.

All the early explorers were quick to note the fine scenery of the region, as well as the commercial and military advantages which attached to it. Theodore Winthrop wrote of it: "Tame Albemarle and Pamlico, Chesapeake and Delaware, Long Island sound, and even the Maine arehipelago and Frenehman's bay, ean not compare with it. * * *

*A Tacoma street.*

*Olympic mountains, from Seattle.*

*Interior of new N. P. R. warehouse at Tacoma.*

*New N. P. R. docks and warehouses at Tacoma.*

*Latest arrival from Nome, at Seattle.*

*United States dry dock, Port Orchard.*

Whulge [the Indian name for the sound] is a vast fiord, parting rocks and forests primeval with a mighty tide."

Vancouver wrote: "The delightful serenity of the weather greatly aided the beautiful scenery that was now presented; the surface of the sea was perfectly smooth, and the country before us presented all that bounteous nature could be expected to draw into one point of view."

Capt. Charles Wilkes, U. S. N., in 1838–42 said: "Nothing can exceed the beauty of these waters and their safety; not a shoal exists within the straits of Juan de Fuca, Admiralty inlet, Puget's sound, or Hood's canal, that can in any way interrupt their navigation by a 74-gun ship. I venture nothing in saying there is no country in the world that possesses waters equal to these."

A volume could be written upon the glories and advantages of this northwestern archipelago, which is but just entering upon the career, so to speak, that Providence intended for it.

Every prominent point, almost, has now a lighthouse beacon for the vessels that flit to and fro among its own channels and to and from the ports of the world; every bay, nearly, has its hamlet, town, or city where commerce and civilization are advancing with tremendous strides; every island, well nigh, is rapidly being brought under cultivation to supply homes and farms for a rapidly increasing population. All along its shores, in sheltered nooks, rises the smoke from the mill stack and smelter, and the hum and whirr of log-cutting, timber-planing, and shingle-making machinery is heard.

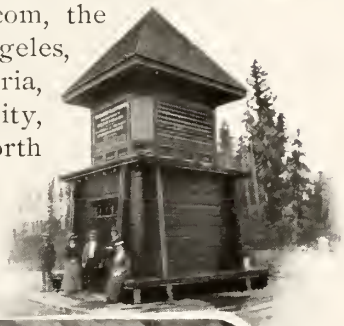
*Indian totem pole, Pioneer Place, Seattle.*

*Salmon, Seattle wharf.*

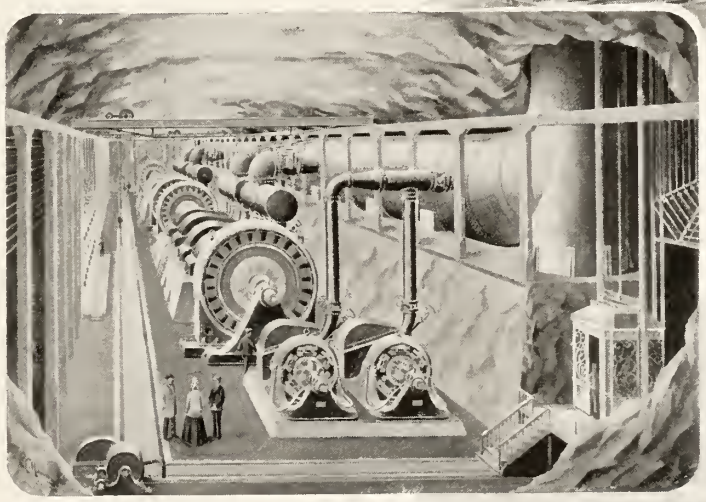
Among the more important points on the sound are Olympia, the

capital of Washington, at its extreme southwestern extremity; Tacoma, one of the most beautiful cities in the United States, and the seat of a very heavy ocean commerce, particularly in wheat, coal, flour, and lumber; Seattle, the young giant of the Northwest, with its ubiquitous mosquito boat fleet, vast suburban lumber mills, Alaskan commerce, toploftical totem pole, and beautiful fresh water lakes; Everett, a youthful stripling with big lumber mills, ship yards, and heavy manufacturing interests; Fairhaven and Whatcom, the Siamese twins of the sound; Port Townsend, Port Angeles, Anacortes, and other points on the American side; Victoria, which possesses a fine harbor, is an attractive Canadian city, and capital of Vancouver's Island, and Vancouver, also north of the international boundary in New Westminster.

The salmon fisheries of the sound are very extensive and common to no one city. The harbor and dock facilities, particularly at Seattle and Tacoma, are of the finest and best, the Northern Pacific having recently spent hundreds of thousands of dollars upon their own docks at these places. The United States Puget sound naval station, on which a million and a half dollars have been spent, is upon Port Orchard, an arm of the sound directly west from Seattle.



*Snoqualmie Falls Power Company's shaft house.*



*Subterranean power station of Snoqualmie Falls Power Co. Excavated in solid rock, and 260 feet below surface.*

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For unnumbered eons there had been thundering over its rocky precipice and into the black, spray-drenched abyss beneath, the fascinating cataract known as Snoqualmie. Long had it been sounding in deep-toned rhythmic cadence before the white man came to gaze in delight and awe upon it and listen to its fugal music. A miniature Niagara, 267 feet in height, it had yet to be born again, even after the advent of the paleface, before it entered upon its greatest mission.

This regeneration took place in 1899, when

*Transmission wire line across the mountains of Snoqualmie Falls Power Company.*

the Snoqualmie Falls Power Company started the machinery that now furnishes electricity for Seattle, Tacoma, and other cities of the sound. The story is interesting but must be briefly told and will exemplify the changes of a century.

At a cost of $1,000,000 the power of Snoqualmie has been corralled and is now transmitted in electrical energy, thirty-one miles to Seattle, and forty-four miles to Tacoma, with further extensions to follow. This transmission is by means of aluminum wires on cedar poles across the mountains, a lane fifty feet wide having been cut through the heavy timber, with necessary sub-stations placed at intervals.

At the fall, 270 feet below the surface and the dam, deep in the solid rock, a capacious chamber was excavated, two hundred feet long, forty feet wide, and thirty feet high, and now lighted by nearly seven hundred incandescent lamps. In this subterranean hall are four Westinghouse generators of 1,500 K-W capacity, driven by four sets of Doble water-wheels, six wheels to each set, with a capacity of 2,500 horse-power per set, or a total of 10,000 horse-power.

At the transmission house at the head of the shaft, over the chamber, the electric current with an initial strength of 1,000 volts, passing through transformers, is raised to 30,000 volts, the voltage transmitted over the wires.

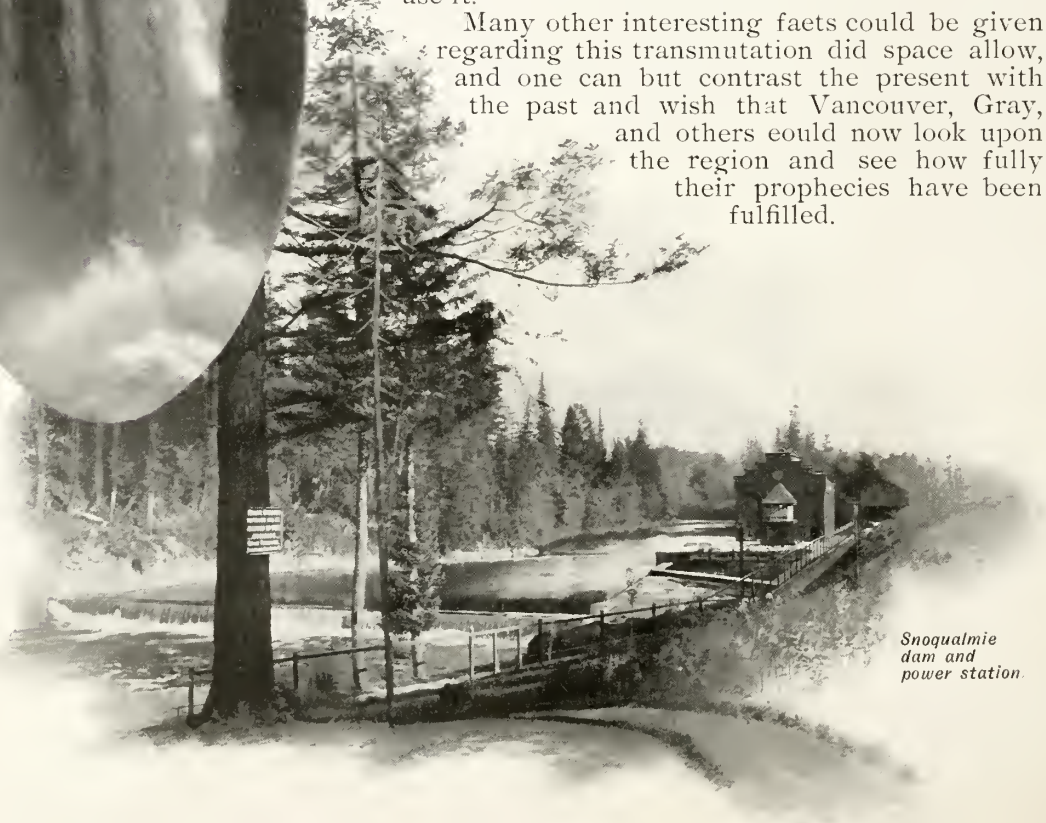
The water of the river is carried down to the wheels in steel penstocks 250 feet long and seven and one-half feet in diameter, and after being used is returned to the river below the fall through a long tunnel cut out of the rock.

The electricity supplied by this company is used for lighting, and also for power for street railways and for general purposes.

Tacoma and Seattle are both lighted by the power of Snoqualmie, nearly all their electric railways are run by it, and many manufacturing establishments use it.

Many other interesting facts could be given regarding this transmutation did space allow, and one can but contrast the present with the past and wish that Vancouver, Gray, and others could now look upon the region and see how fully their prophecies have been fulfilled.

*Snoqualmie Falls by moonlight.*



*Snoqualmie dam and power station.*

*Looking down Yukon river below Dawson.*

*An Alaskan Indian family.*

Along with the Spaniard, the Englishman, and the American, the Russian also bore an important part in early northwest exploration.

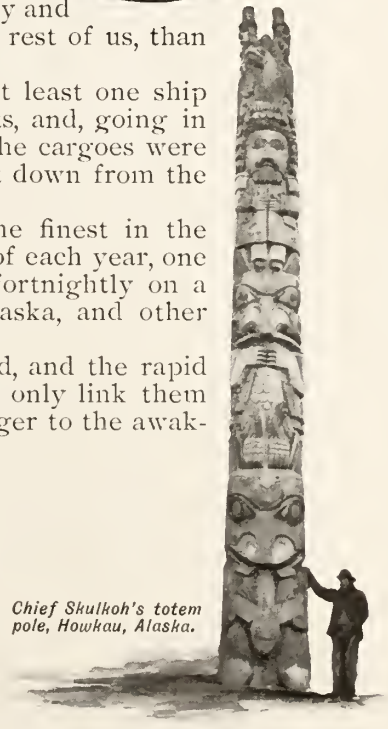
In the eighteenth century, with Kamchatka as a base and Vitus Bering as chief navigator, the latter began explorations of what is now the Alaskan and Aleutian island region. These were continued under terrible hardships and with fearful loss of life, but the great value of Alaskan furs furnished an incentive, and there was no lack of hardy spirits for the work.

In 1867 Russian America became Alaska of the United States, and now it is as well known to every school-boy and is popularly considered to be no farther away from the rest of us, than was Minnesota, in the writer's boyhood, from Ohio.

Alaskan trade centers on Puget sound. In 1900 at least one ship per day cleared from sound ports for northern points, and, going in both directions, there were 80,000 passengers carried, the cargoes were worth $50,000,000, and $20,000,000 of gold was brought down from the northern mines.

The Alaskan pleasure tour is, by all accounts, the finest in the known world, and from about June 1st to October 1st of each year, one of the finest of ocean steamships leaves the sound fortnightly on a pleasure excursion to the fiords and glaciers of Alaska, and other steamers leave at frequent intervals.

Puget sound and Alaska are now very closely allied, and the rapid expansion of American trade and commerce will not only link them yet closer together, but will bind them both still stronger to the awakening peoples beyond our Western sea.



*Chief Skulkoh's totem pole, Howkau, Alaska.*

# NORTHERN PACIFIC RAILWAY

## Rates and Arrangements for the Tourist Season of 1902.

(SUBJECT TO CHANGE WITHOUT NOTICE.)

**MINNESOTA SUMMER RESORTS**

During the summer season the Northern Pacific Railway will sell round-trip excursion tickets from St. Paul or Minneapolis to Glenwood (Lake Minnewaska) at $5.25; Battle Lake, $7.50; Fergus Falls, $7.50; Pine River, $7.85; Backus, $8.35; Walker, $8.65; Bemidji, $10.10; Perham, $7.75; Detroit Lake, $9.15; Minnewaukan (Devil's Lake), $18.65; Winnipeg, $22.50. From Duluth to Deerwood, $3.80; Battle Lake, $7.50; Fergus Falls, $7.50; Pine River, $6.90; Backus, $6.90; Walker, $6.90; Bemidji, $6.90; Perham, $7.75; Detroit Lake, $9.15; Minnewaukan, $18.65; Winnipeg, $22.50. From Ashland, Wis., to Battle Lake, $9; Fergus Falls, $9; Pine River, $8.40; Backus, $8.40; Walker, $8.40; Bemidji, $8.40; Perham, $9.25; Detroit Lake, $10.65; Minnewaukan, $20.15; Winnipeg, $22.50. Transit limits to Minnesota resorts one day (from Ashland two days), to Minnewaukan (Devil's Lake) and Winnipeg two days in each direction. Good to return on or before October 31st.

Round-trip summer excursion tickets will be sold from St. Paul, Minneapolis, or Stillwater to resorts on the "Duluth Short Line," as follows: Forest Lake, $1; Wyoming, $1.20; Chisago City, $1.45; Lindstrom, $1.55; Centre City, $1.60; Taylors Falls, $1.80; Rush City, $2.15; Pine City, $2.55. Tickets on sale daily; limit, ten days. From St. Paul or Minneapolis to White Bear and return, 50 cents; Bald Eagle or Dellwood and return, 55 cents; Mahtomedi and return, 60 cents. Tickets on sale daily; limit, thirty days. Summer excursion rates from St. Paul, Minneapolis, or Stillwater to White Bear Lake points or Bald Eagle and return, tickets on sale week days, going and returning on date of sale, 35 cents; tickets on sale Sundays, going and returning on date of sale, 25 cents.

**YELLOWSTONE PARK RATES**

$5 TICKETS.—On sale at Livingston, Mont., May 31st to September 19, 1902, inclusive. The $5 ticket includes railway and stage fares Livingston to Mammoth Hot Springs and return.

$49.50 TICKETS.—The $49.50 ticket includes railway and stage fares Livingston to Cinnabar and return, stage Cinnabar to Mammoth Hot Springs, Norris, Lower and Upper Geyser Basins, Yellowstone Lake, Grand Cañon and Falls of the Yellowstone and return, and five and one-half days' board at the Park Association hotels. On sale at Livingston May 31 to September 14, 1902, inclusive.

$56.90 TICKETS.—A $56.90 round-trip ticket from St. Paul, Minneapolis, or Duluth to Mammoth Hot Springs and return will be on sale at points named from May 29 until September 12, 1902, inclusive. Limit, good going thirty days, returning ten days; final limit, forty days. The return portion of ticket must be signed

and stamped at Livingston, Cinnabar, or Mammoth Hot Springs, and presented on train on or within one day of such date. Stop-over allowed within limit of ticket.

$92 Ticket.—This ticket covers rail transportation St. Paul, Minneapolis, Duluth, or the Superiors to Cinnabar, stage transportation Cinnabar to Mammoth Hot Springs, Lower, Midway, and Upper Geyser Basins, Yellowstone Lake, Grand Cañon, Falls of the Yellowstone and return to Mammoth Hot Springs and Cinnabar; meals and lodging at Yellowstone Park hotels for five and one-half days and rail transportation Cinnabar to St. Paul, Minneapolis, Duluth, or the Superiors, or via Billings to the Missouri River.

Tourists who are not going west of Livingston should purchase the $92 ticket.

$105 Ticket.—This ticket covers rail transportation from St. Paul, Minneapolis, Duluth, or the Superiors to Cinnabar, stage transportation Cinnabar to Mammoth Hot Springs, Lower, Midway, and Upper Geyser Basins, Yellowstone Lake, Grand Cañon and Falls of the Yellowstone and Monida, six and one-quarter days' board and lodging between Cinnabar and Monida, and rail transportation from Monida, either via Oregon Short Line R. R. and Union Pacific to Missouri River points, or via O. S. L. R. R. to Ogden, any line Ogden to Denver, thence via either the B. & M. R. R. R., Union Pacific, A., T. & S. F. Ry., C., R. I. & P. Ry., or Missouri Pacific Railway to Missouri River terminals.

This ticket will be on sale May 29th to September 12th, inclusive, and will be limited to thirty days going to Mammoth Hot Springs and thirty days returning, with final limit of sixty days from date of sale.

$84 Ticket.—This ticket covers rail and stage transportation only (no meals or lodging being included therein) for the same tour as the $105 ticket. Limits, selling dates, and other conditions, except as noted, will be same as for $105 ticket.

The trip through the Park must be completed by September 19, 1902.

## MONTANA, EASTERN WASHINGTON, AND EASTERN BRITISH COLUMBIA POINTS

The Northern Pacific Railway has on sale, at reduced rates, round-trip excursion tickets from St. Paul, Minneapolis, or Duluth to Billings, Springdale, Livingston, and Bozeman, Mont.; Helena, Butte, and Anaconda, Mont. (choice of routes returning, via Northern Pacific, Great Northern Railway, or Oregon Short Line and connections); Missoula, Mont.; Spokane, Wash. (choice of routes returning, via Oregon Railroad & Navigation Company and its connections, or via the Great Northern, or Northern Pacific Lines); Medical Lake, Pasco, Walla Walla, Kennewick, and Toppenish, Wash.; Nelson, Trail. Rossland, Ainsworth, Kaslo, and Sandon, B. C., and Coulee City, North Yakima, and Ellensburg, Wash.

These tickets are of ironclad signature form; require identification of purchaser at return starting point.

Any of the above tickets may read to return via Billings direct to the Missouri River, or when destination is Helena, or Butte, Mont., or a point west thereof, via Billings Denver, and any direct line to the Missouri River except the Union Pacific Railway.

## NORTH PACIFIC COAST EXCURSIONS

A $90 round-trip individual excursion ticket, St. Paul, Minneapolis, or Duluth to Tacoma, Portland, Seattle, New Whatcom, Vancouver, or Victoria, is on sale daily at points first named and by Eastern lines.

Tacoma, Seattle, New Whatcom, Victoria, Vancouver, or Portland tickets, at above rates, will be issued, going via Northern Pacific, returning via same route, or Great Northern, or Soo-Pacific to St. Paul, Minneapolis, or Duluth; or via Canadian Pacific to Winnipeg or Port Arthur; or via Billings to the Missouri River, either direct or via Denver and any direct line except the Union Pacific Ry.; Portland tickets will also be issued, returning via Oregon R. R. & Navigation Company and its connections to either Omaha or Kansas City, or to St. Paul via Sioux City.

Above tickets limited to nine months from date of sale, good, going trip, sixty days to any one of North Pacific Coast termini named, returning any time within final limit.

**ALASKA EXCURSIONS**

An excursion ticket will be sold from Eastern termini named to Sitka, Alaska (not good on steamer Spokane), at $150, which rate includes meals and berth on the steamer. The steamer Spokane will make four Alaska excursion trips, leaving Tacoma and Seattle early in the morning on June 14th and 28th, July 12th and 26th; arriving at those points on the return about twelve days later. The route will be especially arranged to give passengers an opportunity to see all interesting and accessible glaciers and the most important ports. Round-trip rate from St. Paul, Minneapolis, or Duluth, including meals and berth on steamer, $190.00.

Tickets on sale May 1st to September 30th. Limit, nine months. Going to Tacoma, sixty days, returning within final limit, holder to leave Sitka on or before October 31st. Tickets will be issued to return either via the Northern Pacific, Soo-Pacific, or Great Northern lines to St. Paul or Minneapolis, or via Canadian Pacific Railway to Winnipeg or Port Arthur, or via Billings to the Missouri River, either direct or via Denver and any direct line except the Union Pacific Ry. Usual stop-over privileges granted. Steamer accommodations can be secured in advance by application to any of the agents named on appended list. Diagrams of steamers at office of General Passenger Agent at St. Paul. Only the steamer Spokane will call at Glacier Bay.

**CALIFORNIA EXCURSION RATES**

The Northern Pacific Railway will sell round-trip excursion tickets from St. Paul, Minneapolis, or Duluth as follows:

To San Francisco, going via the Northern Pacific, Seattle, and steamer, or Portland and the Shasta Route, or the ocean to San Francisco; returning via rail or steamer to Portland, or via steamer to Seattle, and the Northern Pacific, Great Northern, or Soo-Pacific lines to St. Paul or Minneapolis; or via Canadian Pacific to Winnipeg or Port Arthur; or via Billings to the Missouri River, either direct or via Denver and any direct line except the Union Pacific Ry.; or via rail or steamer Portland and Huntington to the Missouri River; or returning by the southern lines to Council Bluffs, Omaha, Kansas City, Mineola, or Houston, at $103.50; to New Orleans or St. Louis, at $109.50.

To Los Angeles, going via Portland and Shasta Route, and returning via rail, Portland and the Northern Pacific, Great Northern, or Soo-Pacific lines to St. Paul or Minneapolis; or via Billings or Huntington to the Missouri River, at $122.50; or going via Portland and Shasta Route and returning via San Francisco and Ogden to Council Bluffs, Omaha, or Kansas City, at $113, to St. Louis, at $119.

To San Diego, going via Portland and rail through Los Angeles, and returning via rail, Portland and the Northern Pacific, Great Northern, or Soo-Pacific lines to St. Paul or Minneapolis; or via Canadian Pacific to Winnipeg or Port Arthur; or via Billings or Huntington to the Missouri River, at $129; or going via Portland and Shasta Route and returning via San Francisco and Ogden to Council Bluffs, Omaha, or Kansas City, at $119.50; to St. Louis, at $125.50.

Tickets via ocean include meals and berth on steamer.

At the eastern termini of the southern transcontinental lines excursion tickets will be sold, or orders exchanged, for tickets to San Francisco, returning via either the Shasta Route, the all-rail line to Portland, or the ocean and the Northern Pacific to St. Paul, Minneapolis, or Duluth, at a rate $13.50 higher than the current excursion rate in effect between Missouri River points, Mineola, or Houston and San Francisco. The steamship coupon includes first-class cabin passage and meals between San Francisco and Portland.

These excursion tickets allow nine months' time for the round trip; sixty days allowed for west-bound trip up to first Pacific Coast common point; return any time within final limit.

## GENERAL AND DISTRICT PASSENGER AGENTS.

BOSTON, MASS.—279 Washington Street.
C. E. FOSTER.....District Passenger Agent.

BUFFALO, N. Y.—215 Ellicott Square.
W. G. MASON.....District Passenger Agent.

BUTTE, MONT.—Cor. Park and Main Streets.
W. H. MERRIMAN.....General Agent.

CHICAGO—208 South Clark Street.
F. H. FOGARTY.....General Agent.
C. A. MATTHEWS.....District Passenger Agent.

CINCINNATI, OHIO—40 East Fourth Street.
J. J. FERRY.....District Passenger Agent.

DES MOINES, IOWA—503 West Locust Street.
GEO. D. ROGERS.....District Passenger Agent.

DETROIT, MICH.—153 Jefferson Avenue.
W. H. WHITAKER.....District Passenger Agent.

DULUTH, MINN.—332 West Superior Street.
T. E. BLANCHE.....General Agent.

HELENA, MONT.—Main and Grand Streets.
E. S. RICHARDS.....Acting General Agent.

INDIANAPOLIS, IND.—42 Jackson Place.
J. E. TURNER.....District Passenger Agent.

LOS ANGELES, CAL.—125 West Third Street.
C. E. JOHNSON.....Traveling Passenger Agent.

MILWAUKEE, WIS.—Room 2, Mack Block, Cor. Wisconsin and East Water Streets.
CHAS. C. TROTT.....District Passenger Agent.

MINNEAPOLIS, MINN.—19 Nicollet Block.
G. F. MCNEILL.....City Ticket Agent.

MONTREAL, QUE.—116 St. Peter Street.
G. W. HARDISTY.....District Passenger Agent.

NEW YORK CITY—319 Broadway.
W. F. MERSHON.....General Agent Passenger Department.

PHILADELPHIA, PA.—711 Chestnut Street.
I. M. BORTLE.....District Passenger Agent.

PITTSBURG, PA.—305 Park Building.
.....District Passenger Agent.

PORTLAND, ORE.—255 Morrison Street.
F. O'NEILL.....District Passenger Agent.
E. L. RAYBURN.....Traveling Passenger Agent.

SAN FRANCISCO, CAL.—647 Market Street.
T. C. STATELER.....General Agent Passenger Department.

SEATTLE, WASH.—First Avenue and Yesler Way.
I. A. NADEAU.....General Agent.

SPOKANE, WASH.—Riverside and Howard Streets.
JNO. W. HILL.....General Agent.

ST. LOUIS, MO.—210 Commercial Building.
P. H. NOEL.....District Passenger Agent.

ST. PAUL, MINN.—5th and Robert Streets.
O. VANDERBILT.....City Ticket Agent.

ST. PAUL, MINN.—4th and Broadway.
HARRY W. SWEET.....District Passenger Agent.

TACOMA, WASH.—925 Pacific Avenue.
A. TINLING.....General Agent.

TORONTO, ONT.—6 King Street, West.
G. W. MCCASKEY.....District Passenger Agent.

VANCOUVER, B. C.—419 Hastings Street.
J. O. MCMULLEN.....General Agent.

VICTORIA, B. C.
C. E. LANG.....General Agent.

WEST SUPERIOR, WIS.—821 Tower Avenue.
F. C. JACKSON.....Assistant General Agent.

WINNIPEG, MAN.—(Depot.)
H. SWINFORD.....General Agent.

PORTLAND, ORE.—255 Morrison Street.
A. D. CHARLTON.....Assistant General Passenger Agent.

ST. PAUL, MINN.
A. M. CLELAND.....Assistant General Passenger and Ticket Agent.
CHAS. S. FEE.....General Passenger and Ticket Agent.
J. M. HANNAFORD.....Third Vice-President.



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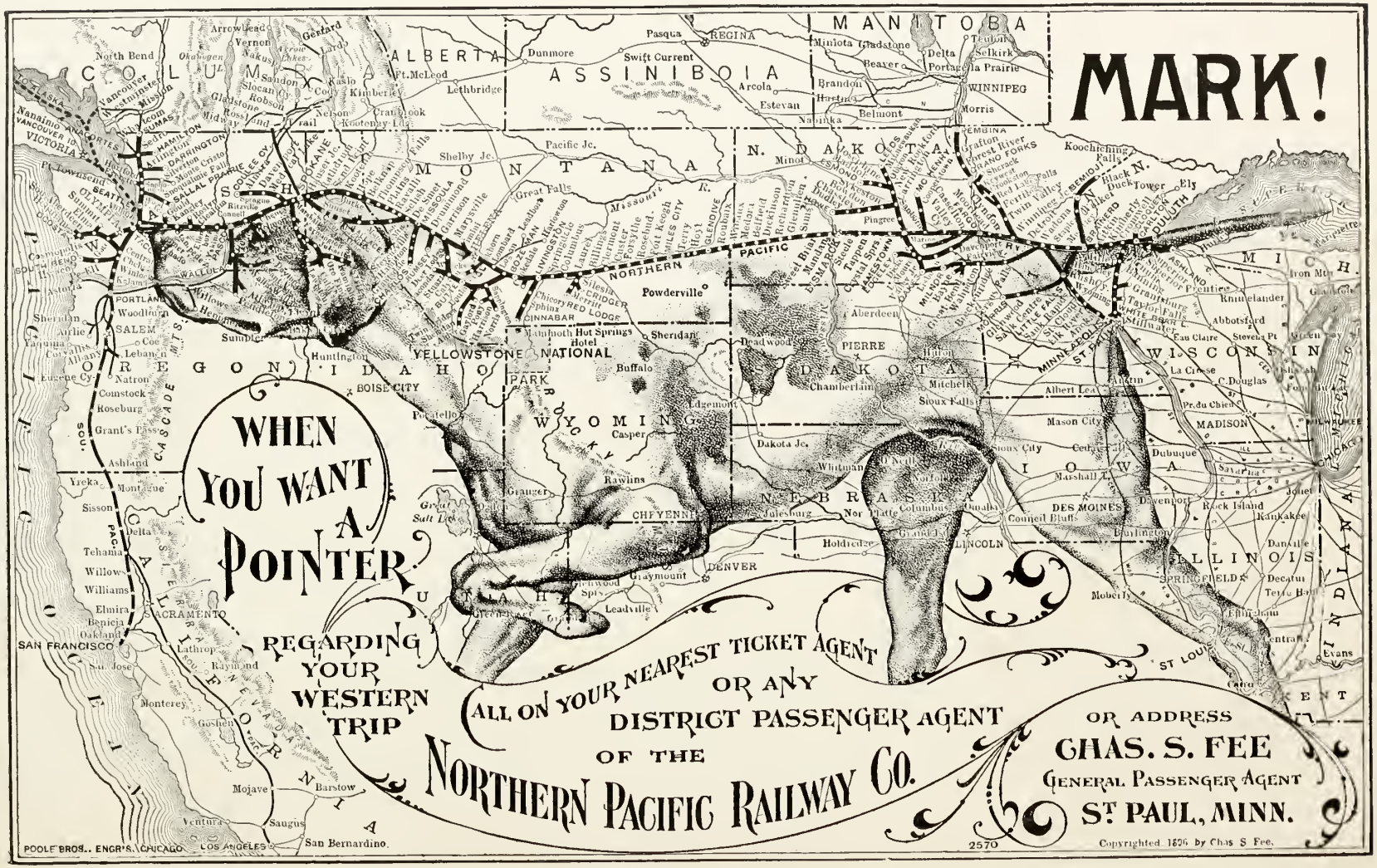
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WHEN YOU WANT A POINTER
REGARDING YOUR WESTERN TRIP
CALL ON YOUR NEAREST TICKET AGENT
OR ANY
DISTRICT PASSENGER AGENT
OF THE
NORTHERN PACIFIC RAILWAY CO.
OR ADDRESS
CHAS. S. FEE
GENERAL PASSENGER AGENT
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MICH.
ILLINOIS
INDIANA
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